

Service Manual

Facsimile


UF-585 / 595



WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

IMPORTANT SAFETY NOTICE

There are special components used in this equipment which are important for safety. These parts are marked by  in the Schematic Diagrams, Circuit Board Diagrams, Exploded Views and Replacement Parts List. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent shock, fire or other hazards. Do not modify the original design without permission of manufacturer.

Panasonic®

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1 General Description

1.1 Overview

This section covers the features and specifications of the plain paper facsimile transceiver "Panasonic UF-585/595". This fax machine can transmit and receive on the Public Switched Telephone Network (PSTN) in modes conforming to ITU-T Group 3 recommendations.

1.2 General Features and Functions

1. Laser Printing

Clear picture quality is obtained by employing a Laser printing method on plain paper. The machine can print onto A4, Letter or Legal size paper.

2. Quick Scan

Quick Scan speeds up the fax process by scanning the documents into memory at a rate of approximately 6* seconds per page.

(*Standard Resolution, based on ITU-T Image No. 1 Test Chart. The scanning speed applies to the feeding process from the leading to the lagging edge of a single page test chart. The time for the storing process is not applied for this definition.)

3. Easy Maintenance

This laser printing mechanism only requires changing the toner cartridge, housing the drum and toner.

Unlike other machines with removable EPROM (Erasable Programmable ROM), this machine is equipped with a F-ROM (Flash ROM). F-ROM offers the flexibility of quick and easy firmware updates, creation of a master firmware card, backup and restore of firmware and machine parameters.

4. Panasonic Super Smoothing

The machine incorporates a new sophisticated image processing technology to enhance print quality of ordinary received fax images by smoothing the curved edges of the character.

5. A4 size Scanning

A4 size is the maximum document width that can be scanned and transmitted.

(Note: 10.1 in (257 mm) is the maximum document width that can be loaded into the ADF, however only A4 width will be scanned.)

6. Automatic Document Feeder

An Automatic Document Feeder feeds originals from the document tray automatically, starting with the bottom page.

Capacity: 30 documents of average thickness and of the same size.

	Max. Document Size	Document Thickness
Up to 20 pages	A4 / Letter / Legal	12 to 20 lb (0.0024 to 0.0048 in)
Up to 30 pages	A4 / Letter Size	12 to 16 lb (0.0024 to 0.0039 in)

7. Speedy Transmission

Short Protocol reduces hand-shake time by shortening Phase B and D.

8. Error Correction Mode (ECM)

An Error Correction Mode, which conforms to ITU-T Recommendations, allows error-free data transmission. ECM with MMR Coding also conforms to ITU-T Recommendations.

9. Automatic Dialing Function

Up to 100 stations can be easily dialed by One-Touch Dialing or Abbreviated Dialing Function. Any other stations can be dialed directly from the keypad by entering the full telephone number (up to 12 stations).

10. Memory Transmission

The contents of a document can be stored into the document memory first, then transmitted from memory. Operator attendance until transmission ends is not necessary.

11. Multi-station Transmission

Using the document memory, the document can be transmitted to multiple destinations.

12. Deferred Communication

The 10 built-in 24-hour timers allow the operator to set deferred transmissions or deferred polling. Using the document memory, documents can also be transmitted to multiple stations.

13. Substitute Reception

The contents of a document will be received into the document memory if the recording paper or toner runs out, or a recording paper jam occurs during reception. The stored documents can be printed after replacing the recording paper or toner cartridge or correcting a paper jam.

14. Multiple Task Operation

Multiple Task Access operations can store documents and their destinations even during reception or memory transmission. It can also receive during document storage.

15. Halftone (Photo)

For transmission or copying, this function ensures high quality reproduction of gray-shaded or photographic documents. This machine uses 64 levels of error diffusion to create halftones with Quality mode.

16. Copy Function

The Copy function allows the machine to be used as a copier. Using the document memory, up to 99 copies can be made of a single original.

17. 32 Transaction Journal

The 32 Transaction Journal provides transaction information - number of pages transmitted or received, start date and time, communication results, identification, etc. It is automatically printed after every 32 transactions, or it can be printed manually at anytime.

18. Latest Individual Transmission Journal

The latest Individual Transmission Journal provides information on the last transmission - number of pages transmitted, start date and time, communication results, identification, etc. It can be printed manually at anytime after communications.

19. Communication Journal

A communication journal is a result report of a communication which can be printed automatically after communication is completed. Printout conditions can be selected for each communication to 1) not print, 2) always print, or 3) print when communication has failed.

20. Multi-purpose LCD Display

The 20 x 2 Alphanumeric LCD display shows the operation mode, date and time, remote ID number, and pages transmitted or received. In case of an error, the LCD display shows an information code and error message indicating the exact cause of trouble.

21. Verification Stamp

The Verification Stamp is automatically stamped on the original document when the document is transmitted or stored in memory successfully. The "X" mark appears at the bottom of each page.

22. Password Transmission

A password transmitted from the other party is checked to prevent the transmission of documents to an unauthorized station.

23. Password Reception

A password transmitted from the other party is checked to prevent the reception of documents by an unauthorized station. The reception of a junk mail, etc., is preventable.

24. Access Code

The Access Code can be registered into the machine to prevent operation by an unauthorized user.

25. Selective Reception

To prevent unwanted faxes from being received, the machine compares the ID Number of the transmitting machine with the telephone number stored in the built-in automatic telephone dialer.

26. Receive to Memory

Users can set the unit to store incoming documents into its available memory. Later, using a 4-digit password, stored documents can be printed when the user is present. This function helps ensure that important documents are not read or lost while they are sitting unattended in the fax tray.

27. Relay Transmission Request

By setting the machine as an initial sending station, the unit is capable of setting up a relay request to a central hub machine with a network password. Documents can then be automatically transmitted to the end receiving stations. This model is designed to operate as an initial sending station.

28. Confidential Mailbox

When the received message is stored into the memory with a 4-digit confidential code, the message can be printed on recording paper or polled by a remote station. A maximum of 10 mailboxes can be used. A remote confirmation report such as Confidential Memory Report and/or Confidential XMT Report is not transmitted to the source station and/or the remote station after Confidential Mailbox reception or polling transmission.

29. Remote Diagnostic Function

The remote Diagnostic Function can be used to diagnose the unit remotely over the PSTN or equivalent. A new host system is required for high speed remote diagnostics to be available.

30. Distinctive Ring Detector (DRD)

This feature supports an optional telephone service, "Distinctive Ring Service", provided by local telephone companies. This service allows up to 4 different telephone numbers to be assigned on a single telephone line, each with a distinctive ring pattern. By programming a fax parameter to select the appropriate ring pattern associated with the telephone number assigned to the fax machine, the unit will differentiate and answer incoming calls on the fax telephone line only. All other telephone calls will not be answered. Check with your local telephone company on the availability of this optional service in your area.

31. Check and Call Function

This feature enables the Authorized Servicing Dealers to manage and improve the Fax machine maintenance to their customers by alerting them of equipment problems. It also can be used as a Supply Sales Tool by alerting the Dealer that the unit is running Low on Toner. The function overview is as follows:

- a. The machine's printer error information is stored in the Printer Report.
- b. The printer report can be manually printed when required.
- c. When printer errors occur, the unit can automatically transmit the Service Alert Report to the pre-registered telephone number.
- d. When the unit detects Low Toner, it can automatically transmit the Maintenance Alert Report to the pre-registered telephone number.
- e. When the unit detects Low Toner, it can automatically print out the Toner Order Form with pre-registered order information.

32. Continuous Polling (Station Mode)

This feature allows you to store or add documents into a polled file in memory.

To enable the Continuous Polling feature set Function Parameter No. 003 to "2:Station". The Program Key [P4] will be assigned with the "Store-4-Polling" name automatically and cannot be changed.

To prepare the document(s) to be polled, simply place the document(s) on the ADF and then press the Program Key [P4] to store or add the document(s) into a polled file.

(Note: If a regular polled file ([FUNCTION][3][2]) is stored in memory, the Program Key [P4] for Continuous Polling will not be accepted.)

1.3 General Specifications

1. Communication Facility

Public Switched Telephone Network (PSTN)

2. Line Coupling

Direct Coupling

3. Input Level

-5 to -43 dbm

4. Output Level

0 to -15 dbm

5. Control Procedure

ITU-T Rec.T.30

MGCS Proprietary short protocol

6. Modem Speed

V.34 (UF-595 only)	:	33600 - 2400 bps @2400 step (QAM with TCM)
V.17	:	14400, 12000, TC9600, TC7200 bps (QAM with TCM)
V.29	:	9600, 7200 bps (QAM)
V.27ter	:	4800, 2400 bps (PhM)

7. Coding Scheme

MH (Modified Huffman), MR (Modified Read), MMR (Modified Modified Read)

8. Communication Resolution

<Transmission>

Standard	:	203 dpi x 98 lpi (8 pels/mm x 3.85 lines/mm)
Fine	:	203 dpi x 196 lpi (8 pels/mm x 7.70 lines/mm)
S-Fine	:	203 dpi x 391 lpi (8 pels/mm x 15.4 lines/mm)
[UF-585]	:	203 dpi x 391 lpi (8 pels/mm x 15.4 lines/mm)
[UF-595]	:	203 dpi x 391 lpi (8 pels/mm x 15.4 lines/mm)
	:	406 dpi x 391 lpi (16 pels/mm x 15.4 lines/mm)

<Reception>

Standard	:	203 dpi x 98 lpi (8 pels/mm x 3.85 lines/mm)
Fine	:	203 dpi x 196 lpi (8 pels/mm x 7.70 lines/mm)
S-Fine	:	203 dpi x 391 lpi (8 pels/mm x 15.4 lines/mm)
[UF-585]	:	203 dpi x 391 lpi (8 pels/mm x 15.4 lines/mm)
[UF-595]	:	203 dpi x 391 lpi (8 pels/mm x 15.4 lines/mm)
	:	406 dpi x 391 lpi (16 pels/mm x 15.4 lines/mm)

9. Halftone (Photo)

64 Levels, Error Diffusion

10. Error Correction Mode

ITU-T Rec. T.30 ECM

11. Image Memory Capacity (Flash Memory)

Standard (Base)	:	60 pages
Optional (Additional)	:	+ 80 pages (1 MB : UE-410045)
	:	+ 160 pages (2 MB : UE-410046)
	:	+ 320 pages (4 MB : UE-410047)

(using ITU-T Image No.1 in Standard Resolution)

12. Transmission Speed

UF-585 : 6 Seconds using ITU-T Image No. 1 in Standard Resolution, memory to memory communication.

UF-595 : 3 Seconds using ITU-T Image No. 1 in Standard Resolution, memory to memory communication.

13. Automatic Dialing

Dialing Signal	:	10 PPS/DTMF
Dialing Method		
One-Touch Dialing	:	Up to 28 keys (including 4 programmable keys)
Abbreviated Dialing	:	Up to 72 stations
Manual Number Dialing (Direct Dialing)	:	Up to 12 stations (Up to 36 digits including pauses)
Programmable Dialing	:	Up to 4 programmable keys
Combination Dialing	:	Combination of One-Touch, Abbreviated and Manual Number Dialing
Multi-Station Dialing	:	Multi-Station Transmission/Polling [Up to 112 stations] Deferred Multi-Station Transmission//Polling [Up to 112 stations]
Registration Memory Capacity in One-Touch and Abbreviated Dialing		
Number of Stations	:	Up to 100 stations
Telephone number of each station	:	Up to 36 digits (Including pauses and spaces)
Station name for each station	:	Up to 15 characters
Redialing		
Automatic	:	Up to 15 times with 0 to 15 minute intervals
Manual	:	By pressing the Redial button (last number dialed)

14. Print Reduction Ratio

A4 / Letter	:	70 to 100% in 1% steps
Legal	:	80 to 100% in 1% steps (according to the received document length)

15. Clock Backup Battery

This unit uses a lithium battery to save the clock and calendar. The service life is approximately 1 year during power failure.



denotes hazards that could result in minor injury or damage to the machine.

- THIS PRODUCT CONTAINS A LITHIUM BATTERY. DANGER OF EXPLOSION IF BATTERY IS INCORRECTLY REPLACED.
REPLACE ONLY WITH THE SAME OR EQUIVALENT TYPE. DISPOSE OF USED BATTERIES ACCORDING TO THE INSTRUCTIONS OF YOUR LOCAL SOLID WASTE OFFICIALS.

1.4 Scanner Specifications

1. Document Dimensions

Width	:	Minimum 5.83 in (148 mm) Maximum 10.1 in (257 mm)
Length	:	Minimum 5.04 in (128 mm) Maximum 14.0 in (356 mm)

Note

With operator's assistance, a maximum of 78.7 in (2000 mm) length document can be sent (one page at a time) through the ADF.

2. Automatic Document Feeder

The Automatic Document Feeder feeds the originals from the document tray automatically, starting with the bottom page.

Paper thickness	:	Single-page	: 0.0024 to 0.0060 in (0.06 to 0.15 mm)
	:	Multi-page	: 0.0024 to 0.0048 in (0.06 to 0.12 mm)
Capacity	:	20 documents (Legal Size - 20 lb)	
	:	30 documents (Letter / A4 Size - 16 lb)	

3. Scanning Method

Horizontal	:	Sheet Feeding with CCD type image sensor
Vertical	:	Stepper Motor feeding

4. Effective Scanning Width

Letter	:	8.3 in (212 mm)
--------	---	-----------------

5. Scanning Resolution

Standard	:	203 dpi x 98 lpi (8 pels/mm 3.85 lines/mm)
Fine	:	203 dpi x 196 lpi (8 pels/mm 7.7 lines/mm)
S-Fine	:	
[UF-585]	:	203 dpi x 391 lpi (8 pels/mm x 15.4 lines/mm)
[UF-595]	:	406 dpi x 391 lpi (16 pels/mm x 15.4 lines/mm) (Interpolated)

6. Contrast Selection

3 steps (Normal / Lighter / Darker)

1.5 Printer Specifications

1. Recording Paper Size (W x L)

Letter	:	8.5 x 11 in (216 x 279 mm)
Legal	:	8.5 x 14 in (216 x 356 mm)
A4	:	8.3 x 11.7 in (210 x 297 mm)

2. Recommended Recording Paper Weight

16 to 24 lb (60 to 90 g/m²)

3. Paper Capacity with standard cassette

250 sheets (20 lb, 75 g/m²)

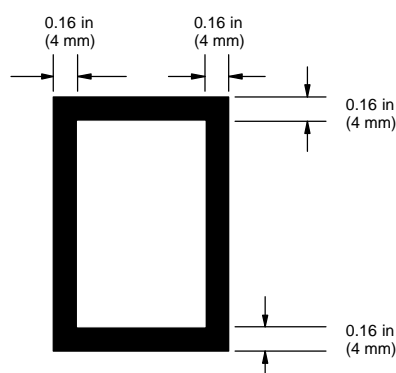
The paper does not exceed the Maximum Paper Capacity Mark.

4. Printing Resolution

(Fax or Copy)	:	406 x 391 dpi
(PC Printing)	:	
[UF-585]	:	300 x 300 dpi
[UF-595]	:	300 x 300 dpi
	:	600 x 600 dpi

5. Non Printable Margin

The shaded areas represent the unprintable area on the recording paper.



6. Printing Speed
5 ppm (12 seconds/page)

7. Fuser Warm Up Time

Within 30 seconds after turning the power on. [Room Temperature: 68 to 95°F (20 to 35°C)]
[Power Voltage: Minimum 115 VAC]

8. Document Tray Capacity
100 sheets

1.6 Power

1. Power Requirement
99~140 VAC, 47~63Hz, Single Phase

2. Power Consumption

	UF-585	UF-595
Standby (Sleep Mode: On)	: Approx. Less than 0.7 W/H	←
Standby (Power Save Mode: On)	: Approx. 6.0 W/H	Approx. 7.0 W/H
Standby (Power Save Mode: Off)	: Approx. 21 W/H	Approx. 23 W/H
[Room temperature: 77°F (25°C)]		
Transmission	: Approx. 16 W	Approx. 17 W
Reception	: Approx. 450 W	←
Copy	: Approx. 450 W	←
Max	: Approx. 470 W	←

1.7 Environment

1. Operating Environment

Temperature	: 50 to 95°F (10 to 35°C)
Relative Humidity	: 15 to 70% RH
Tilt	: The unit must be kept on an even, level surface.

2. Storage Environment (Carton Box Condition)

Temperature	: -4 to 104°F (-20 to 40°C)
Relative Humidity	: 5 to 85% RH

Note

The machine should be stored upright.

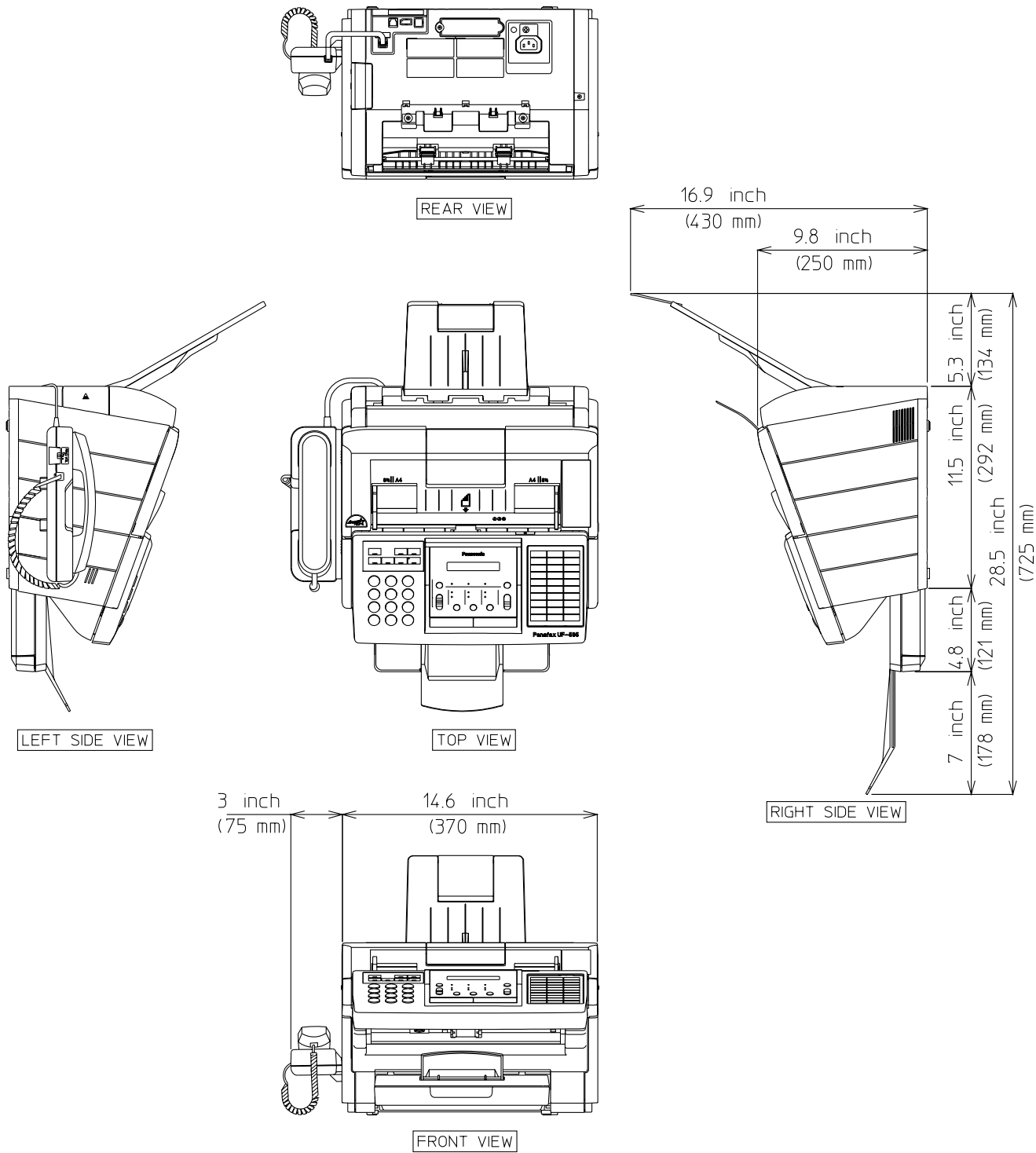
3. Transportation Environment (Max. 480 hours, Carton Box Condition)

Temperature	: -4 to 122°F (-20 to 50°C)
Relative Humidity	: 15 to 85% RH

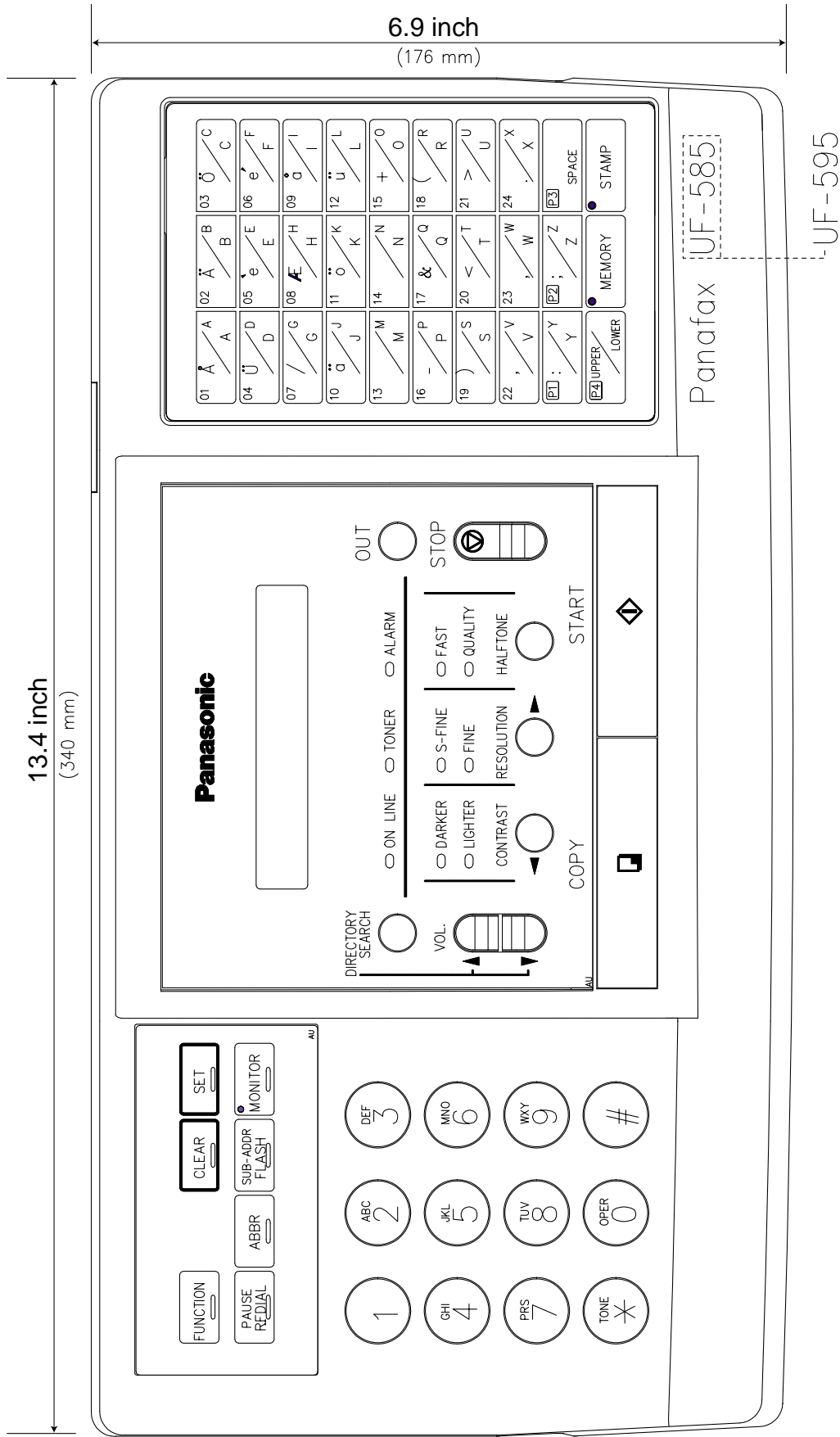
1.8 Construction

Dimensions (W x D x H)	14.6 x 16.3 x 9.8 in (370 x 413 x 250 mm)
Weight (excluding paper)	Approximately 19 lb (8.5 Kg)

1.8.1 External View



1.8.2 Control Panel



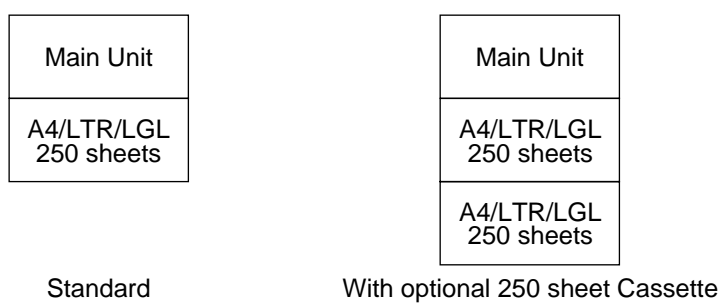
1.9 Specification Table

Item	UF-585	UF-595
Main Specification		
Compatibility	G3	←
PSTN Line Port	Yes	←
Modem Speed (kbps)	14.4 - 2.4	33.6 - 2.4
Coding Scheme	MH/MR/MMR	←
ECM (Conforms to ITU-T)	Yes(MMR)	←
Short Protocol	Yes (B)	Yes (B,D)
Transmission Speed (ITU-T Image No.1)	Approx. 6 Seconds	Approx. 3 Seconds
Communication Resolution (dpi x lpi) (Conforms to ITU-T)	Transmission Std 203 x 98 Fine 203 x 196 S-fine 203 x 391 Reception Std 203 x 98 Fine 203 x 196 S-fine 203 x 391	Transmission Std 203 x 98 Fine 203 x 196 S-fine 203 x 391 406 x 391 Reception Std 203 x 98 Fine 203 x 196 S-fine 203 x 391 406 x 391
Scanner Mechanism		
ADF Capacity	30 sheets	←
Max. Document Size	10.1 x 78.7 in (257 x 2000 mm)	←
Min. Document Size	5.8 x 5.0 in (148 x 128 mm)	←
Effective Scanning Width	8.3 in (212 mm) (Letter)	←
Scanning Device	CCD	←
Scanning Resolution (dpi x lpi)	Std : 203 x 98 (8 pels x 3.85 lines/mm) Fine : 203 x 196 (8 pels x 7.7 lines/mm) S-Fine : 203 x 391 (8 pels x 15.4 lines/mm)	Std : 203 x 98 (8 pels x 3.85 lines/mm) Fine : 203 x 196 (8 pels x 7.7 lines/mm) S-Fine : 203 x 391 (8 pels x 15.4 lines/mm) : 406 x 391 (16 pels x 15.4 lines/mm)
Scanning Speed (A4 size document, standard resolution)	Approx. 6 seconds	←
Reduction XMT	No	←
Collation Stack	Yes	←
Printer Mechanism		
Recording Method	Laser Printing	←
Recording Paper Size	A4 / Letter / Legal	←
Recording Paper Capacity	250 sheets	←
Effective Printing Width	202 mm	←
Recording Resolution (Fax, Copy) (PC Printing)	406 x 391 300 x 300	406 x 391 300 x 300 600 x 600
Recording Speed	5 ppm	←
Collation Stack	Yes	←
Document Memory		
Document Memory Capacity	60 pages (1 MB)	1 MB
Optional Document Memory (Flash Memory Card)	Yes 1 MB : + 80 pages 2 MB : + 160 pages 4 MB : + 320 pages	←
Document Memory Backup	Yes (Permanent)	←
Copy Quality		
Halftone (Photo)	Yes	←
Super Fine (dpi x lpi) (Tx and Rx)	203 x 391	203 x 391 406 x 391
Contrast Selection (Tx)	Yes	←
Smoothing	Yes (Fax, Copy) No (PC printing)	← ←
Consumable		
3 % Black Chart (ITU-T No. 1 chart)	Approx, 7500 pages	←
Multiple copy mode operation environment	20°C, 50%RH	←

Item	UF-585	UF-595
Options		
Leased Line Port	No	←
V.24 Line Port	No	←
Cassette with Feeder Unit (250 sheets)	No	Yes
Document Memory	Yes (Flash Memory Card) (1MB/2MB/4MB)	←
Page Memory	No	←
Battery Backup 72 hours	No	←
G3 Optional Communication Port	No	←
Handset	Yes	←
V.24/Encryption Interface	No	←
PDL	No	←
Parallel Port Interface		
Printer Interface (GDI)	Yes	←
Scanner Interface	Yes	←
PC Interface (CFP)	Yes	←

Note:

1. Paper Cassette Configuration



A4: 8.3 x 11.7 in (210 x 297 mm)
 Letter: 8.5 x 11 in (216 x 279 mm)
 Legal: 8.5 x 14 in (216 x 356 mm)
 [13 in Legal (8.5 x 13 in) is not supported]

1.10 Function Table

Item	UF-585	UF-595
Dual Operation		
Multi-Task Operation	Yes	←
Direct XMT Reserve	Yes	←
Memory XMT Reserve	Yes	←
Max. Number of Memory Job Files	10 files	←
Dialing/Telephone Features		
One-Touch keys	24	←
One-Touch/Program keys	4	←
One-Touch Auto Dialers	28	←
Abbreviated Auto Dialers	72	←
Max. Auto Dialing Locations	100	←
Max. Tel Number Digits	36	←
Max. Station Name Digits	15	←
Directory Search Dialing	Yes	←
Full Number Dialing (Buffered Dialing)	Yes (Up to 12 stations)	←
Direct Dialing (Monitor Dialing) (see Note)	Yes	←
Automatic Redialing	Yes	←
Manual Redialing	Yes	←
Chain Dialing	Yes	←
Line Monitor Speaker	Yes	←
Pulse/Tone Dialing	Yes	←
Pulse to Tone change	Yes	←
Flash key	Yes	←
Transmission Features		
Direct Transmission	Yes	←
Memory Transmission	Yes	←
Multi-station Transmission	Yes (112 stations)	←
Multifile Transmission	No	←
Direct Deferred Transmission	Yes (10 timers)	←
Deferred Transmission	Yes (10 timers / 112 stations)	←
Deferred Multi-station Transmission	Yes	←
Priority Direct Transmission	Yes	←
Priority Memory Transmission	No	←
Batch Transmission	No	←
Reception Features		
Substitute Reception	Yes	←
Fixed Reduction	Yes	←
Auto Reduction	Yes	←
Overlapping Print	Yes	←
Receive to Memory	Yes	←
DRD	Yes	←
Receive Control		
Fax/Tel Auto Switch	Yes	←
Silent Reception	No	←
External TAM Interface	Yes	←
Remote Reception	Yes (DTMF)	←
Polling Features		
Polling	Yes	←
Continuous Polling (Station Mode)	Yes	←
Turnaround Polling	No	←
Multi-station Polling	Yes (112 stations)	←
Deferred Polling	Yes (10 timers)	←
Deferred Multi-station Polling	Yes (10 timers / 112 stations)	←
Memory Polling Tx	Yes (1 file)	←
Preset Polling Password	Yes	←
Temporary Polling Password	Yes	←
Convenience		
Panel Display	Yes (20 x 2 Alphanumeric LCD)	←
Voice Contact	No	←
Edit File Mode	Yes	←
Incomplete File Save	Yes	←
Automatic Cover Sheet	Yes	←
Copy Features		

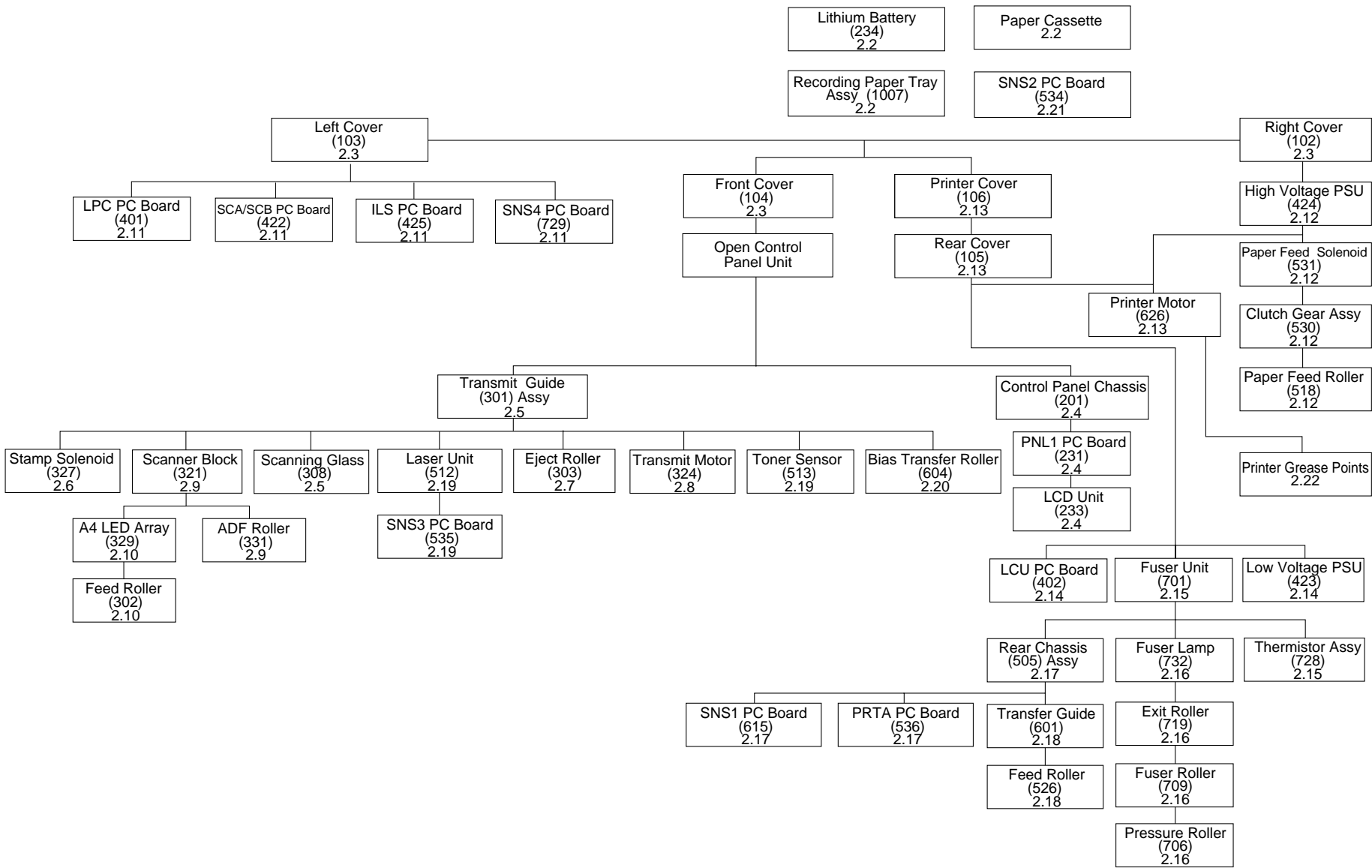
Item	UF-585	UF-595
Single Copy	Yes	←
Multiple Copy	Yes	←
Reduction Copy	Yes	←
Certainty		
Verification Stamp	Yes	←
Header/Total Page Print	Yes	←
Transaction Journal	Yes (32 transactions)	←
Comm. Journal	Yes	←
Last Ind. XMT Journal	Yes	←
Power Failure Report	No	←
List Printouts		
One-Touch List	Yes	←
Abbr. No. List	Yes	←
Program List	Yes	←
Directory Search List	Yes	←
Fax Parameter List	Yes	←
File List	Yes	←
Character Code List	No	←
Directory Sheet	Yes	←
Identification		
Logo	Yes (25 characters)	←
Multiple Logo	No	←
Character ID	Yes (16 characters)	←
Numeric ID	Yes (20 digits)	←
Special Communication		
Password XMT/RCV	Yes	←
Select Reception	Yes	←
Relay XMT Request	Yes	←
Relay XMT Center	No	←
Confidential XMT/Polling	No	←
Confidential Center	No	←
Mailbox XMT/Poling	Yes	←
Mailbox Center	Yes	←
File XMT	No	←
Fax Forward	Yes	←
Sub-address XMT	Yes	←
Sub-address RCV	Yes	←
OMR-XMT	No	←
Others		
Access Code	Yes	←
Department Code	No	←
Energy Saver Mode (Energy Star Compliant)	Yes	←
Day Light Time Save	Yes	←
Self Diagnostic Function	Yes	←
Remote Diagnostic Function	Yes	←
Check & Call Function	Yes	←

Note:

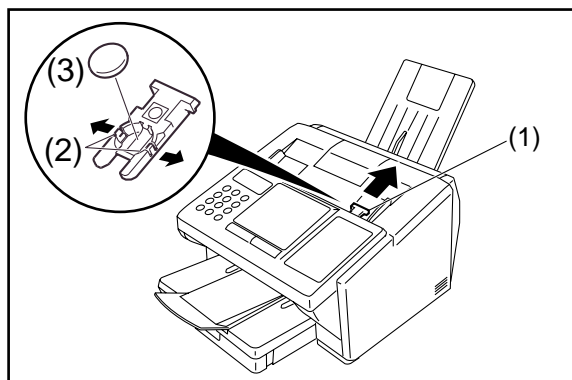
During Monitor Dialing Mode, the START button must be pressed to initiate fax communication. During this mode automatic Redialing is not available.

2 Disassembly Instruction

2.1 General Disassembly Flowchart



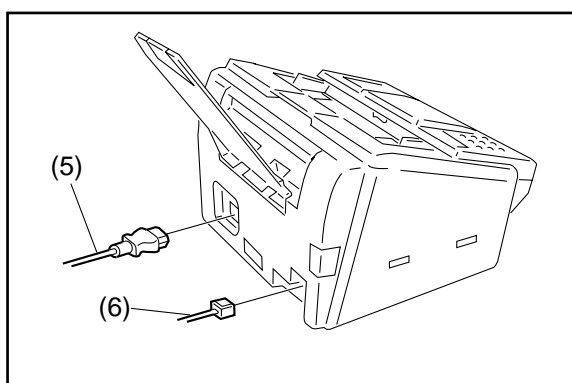
2.2 Power Cord (1008), Telephone Line Cable (1009), Lithium Battery (234), Recording Paper Tray Assembly (1007), Paper Cassette



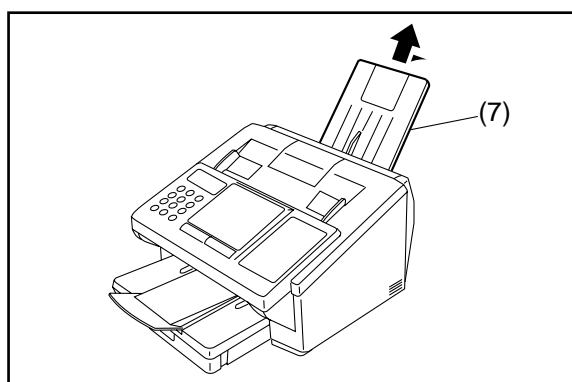
- (1) Remove the **Battery Holder** (230).
- (2) Release 2 Latch Hooks.
- (3) Remove the **Lithium Battery** (234).
- (4) Replace with a new Battery.

Caution:

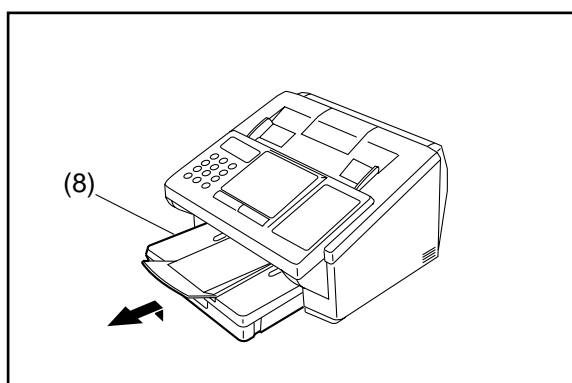
Dispose of the Lithium Battery properly and keep it away from small children. When replacing the battery make sure to observe the polarity to avoid damage to the machine.



- (5) Disconnect the **Power Cord** (1008).
- (6) Disconnect the **Telephone Line Cable** (1009).

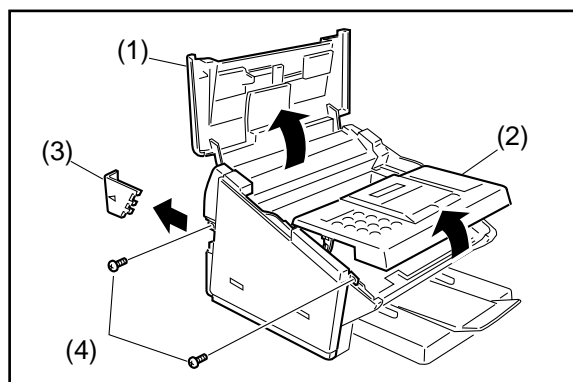


- (7) Remove the **Recording Paper Tray Assembly** (1007).

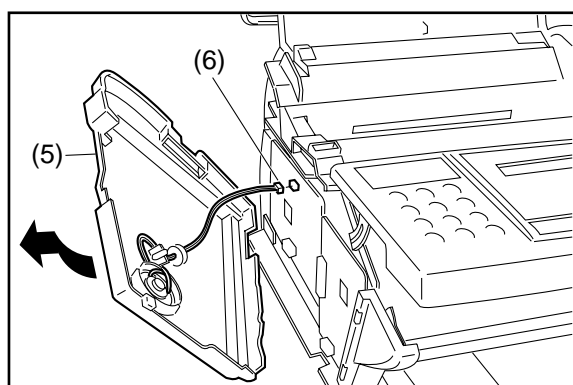


- (8) Remove the **Paper Cassette**.

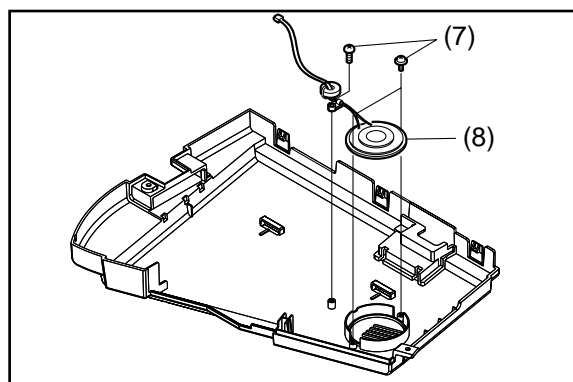
2.3 Left Cover (103), Right Cover (102), Front Cover (104), Speaker (117), Separation Rubber (207)



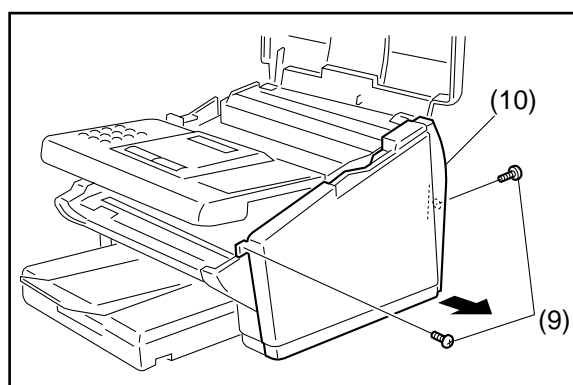
- (1) Open the **Printer Cover** (106).
- (2) Open the Control Panel Unit.
- (3) Remove the **Memory Card Cover** (110).
(Remove the Memory Card, if installed.)
- (4) 2 **Screws** (B1).



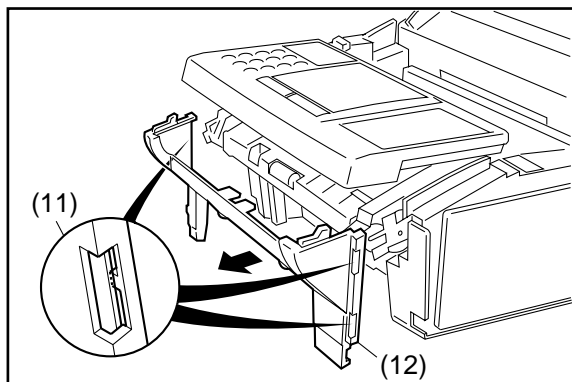
- (5) Remove the **Left Cover** (103).
- (6) Disconnect CN9 on the **SCA/SCB PC Board** (422).



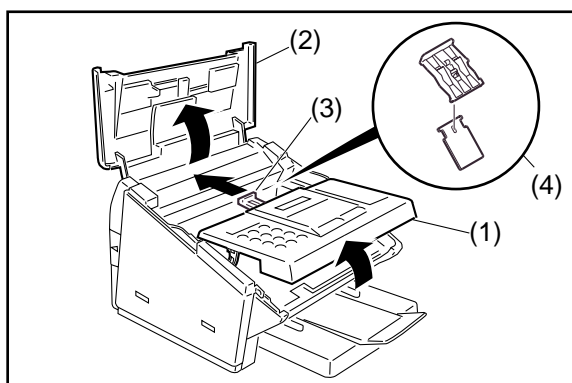
- (7) 2 **Screws** (C2) and 1 **Screw** (1Y).
- (8) Remove the **Speaker** (117).



- (9) 2 **Screws** (B1).
- (10) Remove the **Right Cover** (102).



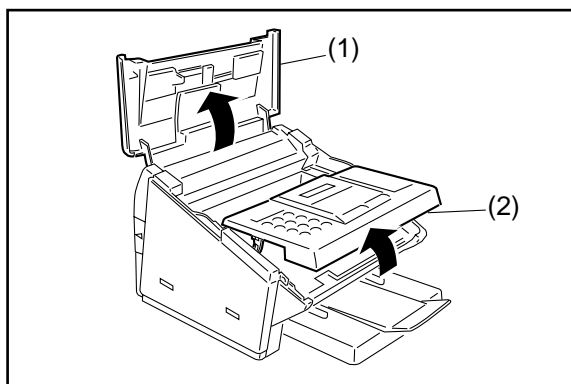
- (11) Release 3 Latch Hooks.
- (12) Remove the **Front Cover** (104).



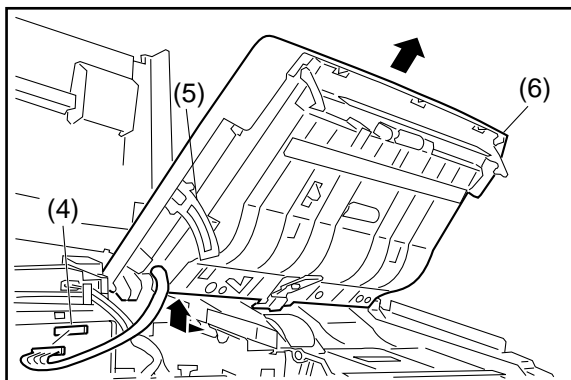
Replacing & Cleaning Separation Rubber

- (1) Open the Control Panel Unit.
- (2) Open the **Printer Cover** (106).
- (3) Remove the **Separation Rubber Holder Assy** (202).
- (4) Replace with a new **Separation Rubber** (207).
- (5) Clean the **Separation Rubber** (207) with a soft cloth, soaked with isopropyl alcohol.

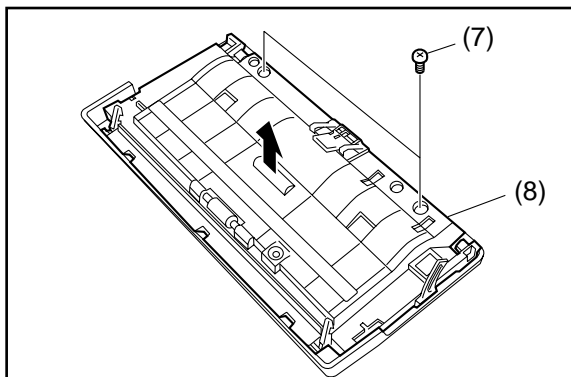
2.4 Control Panel Unit, PNL1 PC Board (231), LCD Unit (233)



- (1) Open the **Printer Cover** (106)
- (2) Slightly open the **Control Panel Unit**.



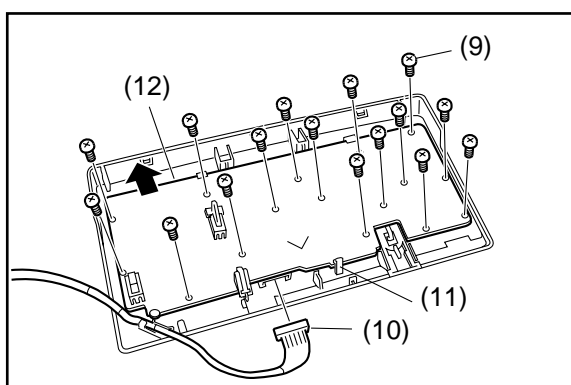
- (3) Remove the **Left Cover** (103) and the **Right Cover** (102).
(Refer to 2.3)
- (4) Disconnect **Connector CN4** on the SCA/SCB PC Board.
- (5) Release the **Stopper Latch** (210) and open the Control Panel Unit.
- (6) Remove the **Control Panel Unit**.



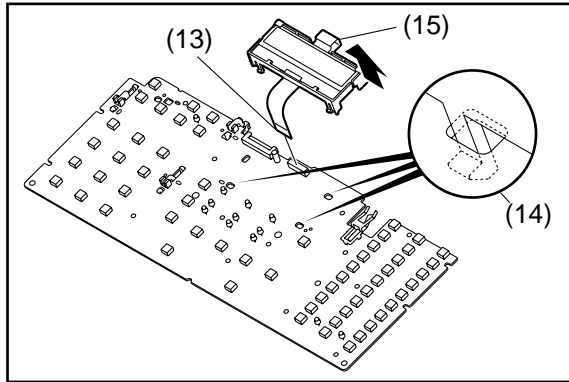
- (7) 2 **Screws** (19).
- (8) Remove the **Control Panel Chassis** (201) **Assembly**.

Note:

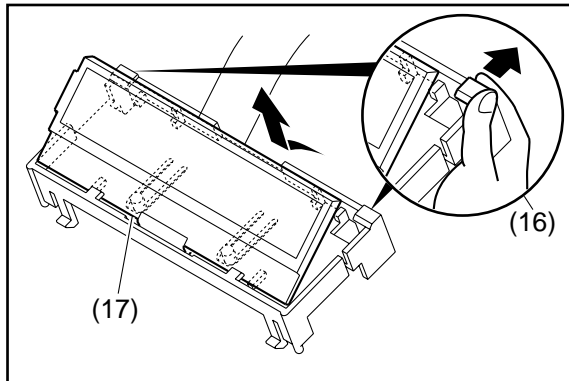
If noise occurs while scanning, clean the **Roller Shaft 2** (235) and the **Feed Pinch Roller** (236) shaft hole with isopropyl alcohol.



- (9) 16 **Screws** (7B).
- (10) Disconnect **Connector CN40** on the PNL1 PC Board.
- (11) Release 1 **Latch Hook**.
- (12) Remove the **PNL1 PC Board** (231).

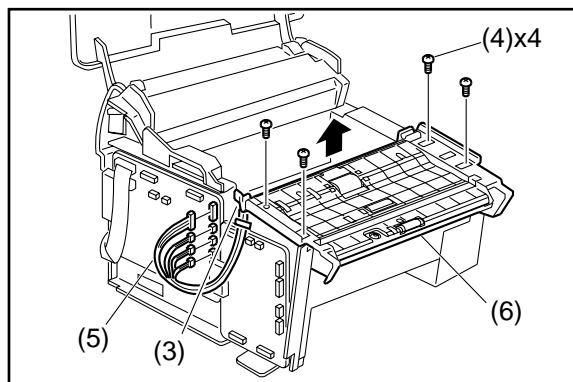


- (13) Disconnect the **Flat Cable** from the **Connector CN41** on the PNL1 PC Board.
- (14) Release 3 Latch Hooks.
- (15) Remove the **LCD Holder** (223).

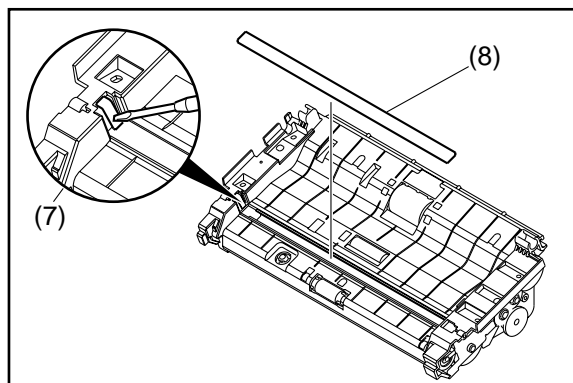


- (16) Release 2 Latch Hooks.
- (17) Remove the **LCD Unit** (233).

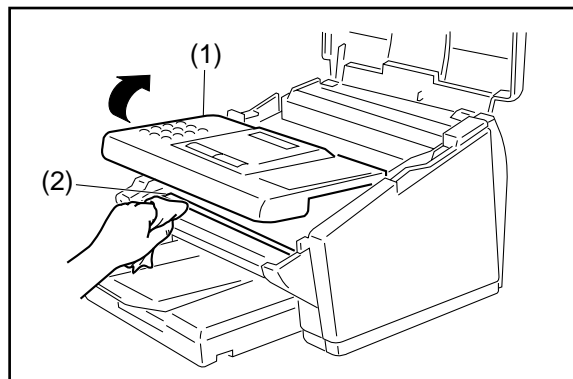
2.5 Transmit Guide (301) Assembly, Scanning Glass (308)



- (1) Remove the **Left Cover** (103), **Right Cover** (102), and **Front Cover** (104) (Refer to 2.3).
- (2) Remove the **Control Panel Unit** (Refer to 2.4).
- (3) Release the Harnesses from the clamps.
- (4) 4 **Screws** (19).
- (5) Disconnect 4 **Connectors (CN1, 3, 5 and 7)**.
- (6) Remove the **Transmit Guide (301) Assembly**.

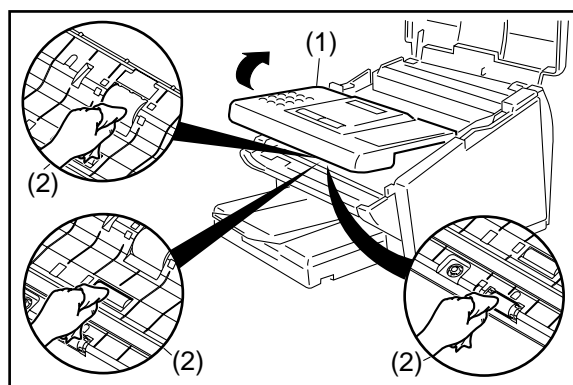


- (7) Carefully release the Latch Hook using a Blade-tip Screwdriver.
- (8) Remove the **Scanning Glass (308)**.



Cleaning Scanning Glass (308)

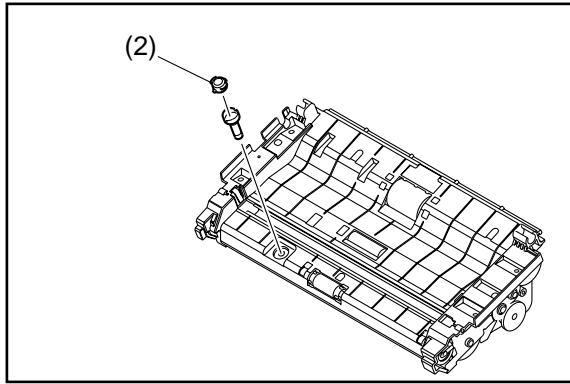
- (1) Open the Control Panel Unit.
- (2) Clean the Scanning Glass (308) with a soft cloth, soaked with isopropyl alcohol.



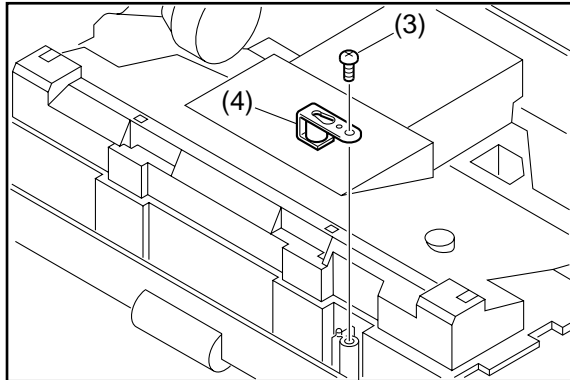
Cleaning Feed Roller (302), Eject Roller (303), ADF Roller (331)

- (1) Open the Control Panel Unit.
- (2) Clean the **Feed Roller** (302), **Eject Roller** (303) and **ADF Roller** (331) with a soft cloth, soaked with isopropyl alcohol.

2.6 Stamp Assembly, Stamp Solenoid (327)

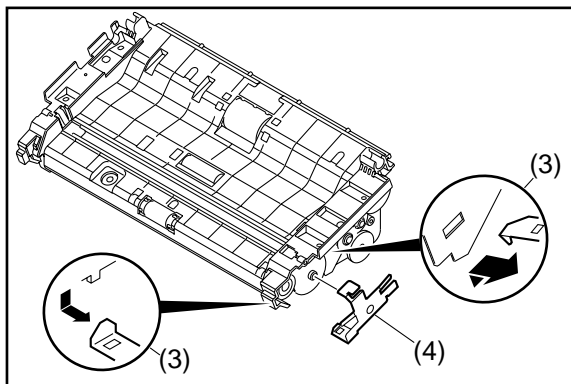


- (1) Remove the **Transmit Guide (301) Assembly** (Refer to 2.5).
- (2) Remove the **Stamp Assembly (325, 326)**.

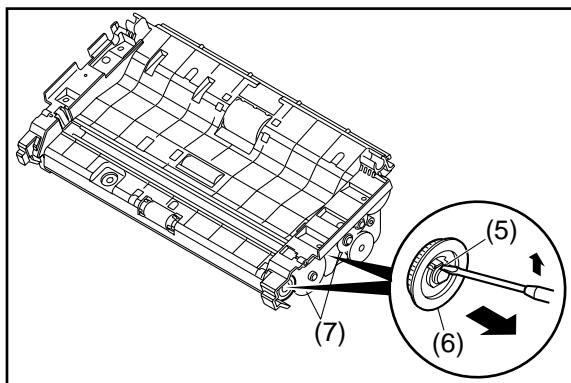


- (3) 1 **Screw (19)**.
- (4) Remove the **Stamp Solenoid (327)**.

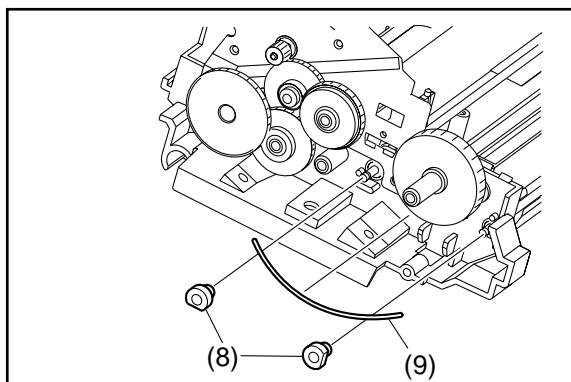
2.7 Eject Roller (303)



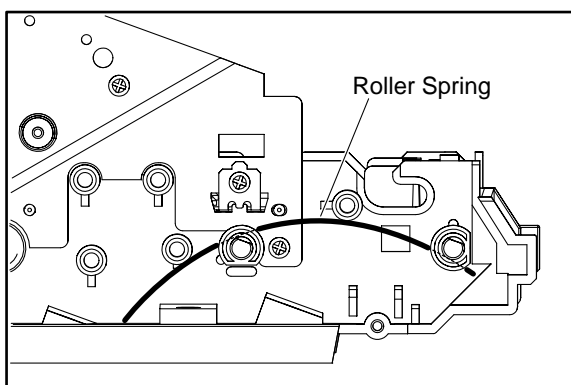
- (1) Remove the **Transmit Guide (301) Assembly** (Refer to 2.5).
- (2) Remove the **Stamp Assembly (325, 326)** (Refer to 2.6).
- (3) Release 2 Latch Hooks.
- (4) Remove the **Ground Plate (317)**.



- (5) Release the Latch Hook by using a small Blade-tip Screwdriver.
- (6) Remove 2 **D25F Drive Gears (332)**.
- (7) Remove **D17 Gear (313)** and **D50 Gear (314)**.

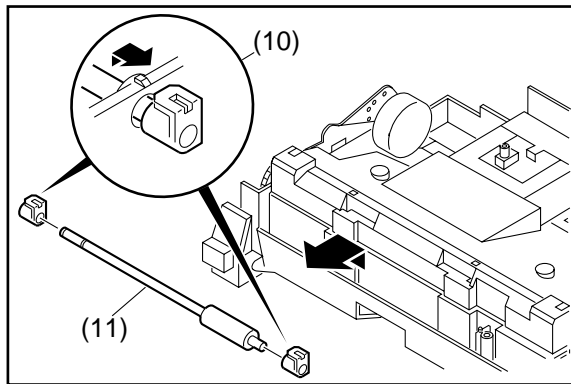


- (8) Remove 2 **P6C Bushings (342)**.
- (9) Remove the **Roller Wire Spring (343)**.



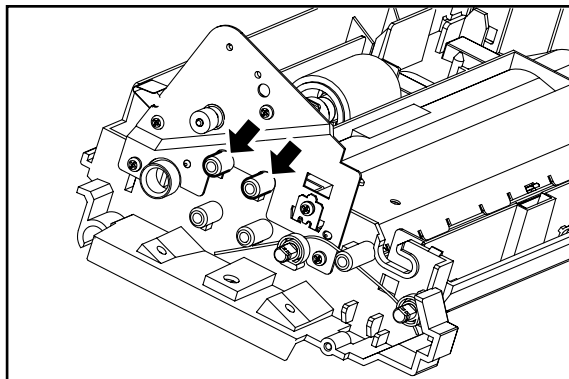
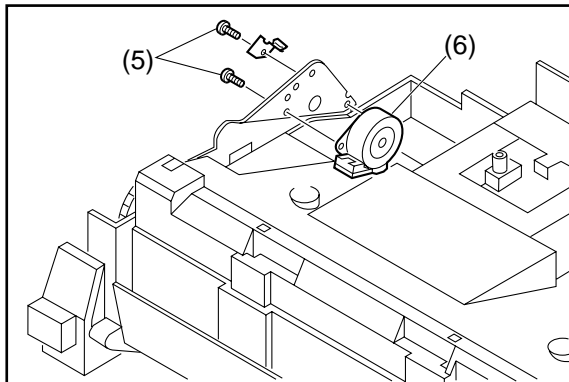
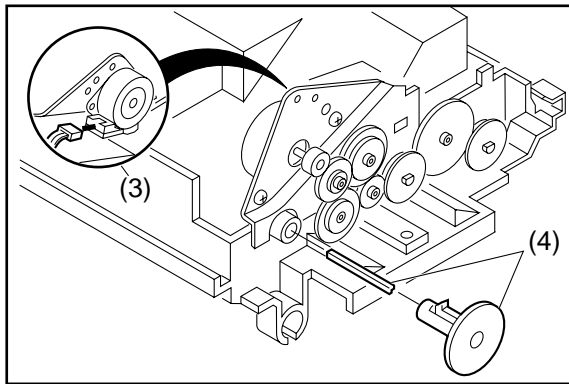
Caution:

Reinstall the Roller Wire Spring (343) according to the illustration.



- (10) Remove 2 **P6A Bushings** (316).
- (11) Remove the **Eject Roller** (303).

2.8 Transmit Motor (324)



- (1) Remove the **Transmit Guide (301) Assembly** (Refer to 2.5).
- (2) Remove the **Stamp Assembly (325, 326)** (Refer to 2.6).
- (3) Disconnect the **Harness (340)** from the **Transmit Motor**.
- (4) Remove the **ADF Gear (305)** and **ADF Angular Shaft (338)**.

Caution:

When removing the ADF Gear, rotate the Transmit Motor Gear by hand until the Gear Latch Hook can be seen from the inside, under the Transmit Motor. Push down on the Latch Hook to release the ADF Gear.

- (5) 2 **Screws (19)**.
- (6) Remove the **Transmit Motor (324)**.

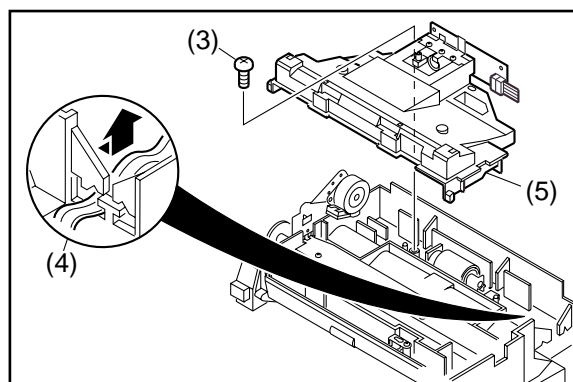
Caution:

Reinstall the Transmit Motor (324) according to the direction shown in the illustration.

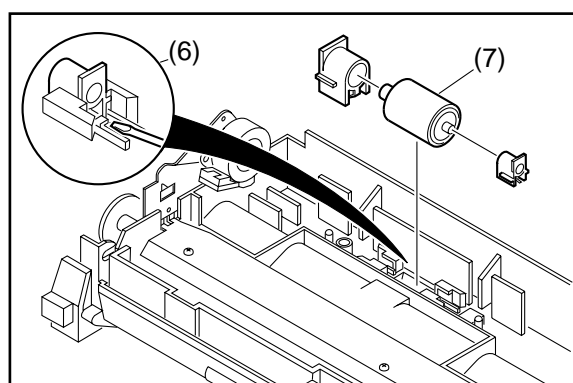
Caution:

Before reassembling, apply EM-50L Grease to the Gear Posts shown by the arrows in the illustration.

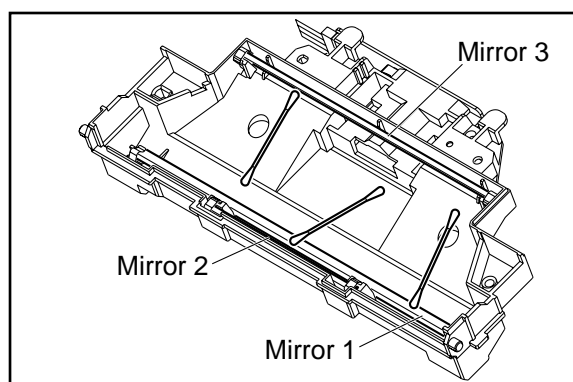
2.9 Scanner Block (321), Mirror 1 (334), Mirror 2 (335), Mirror 3 (336), ADF Roller (331)



- (1) Remove the **Transmit Guide (301) Assembly** (Refer to 2.5).
- (2) Remove the **Stamp Assembly (325, 326)** (Refer to 2.6).
- (3) 1 **Screw (19)**.
- (4) Remove the Harnesses from the hook.
- (5) Remove the **Scanner Block (321)**.

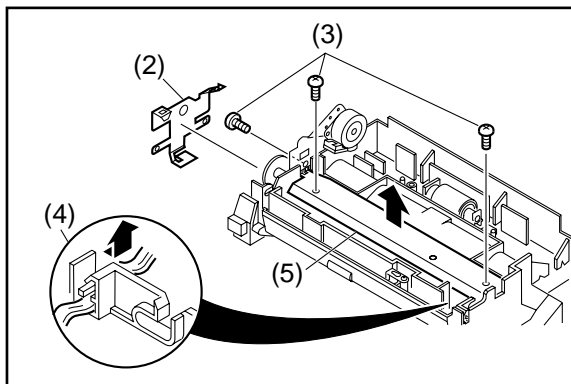


- (6) Remove **P10 and P6B Bushings (315, 318)** by using Blade-tip Screwdriver.
- (7) Remove the **ADF Roller (331)**.

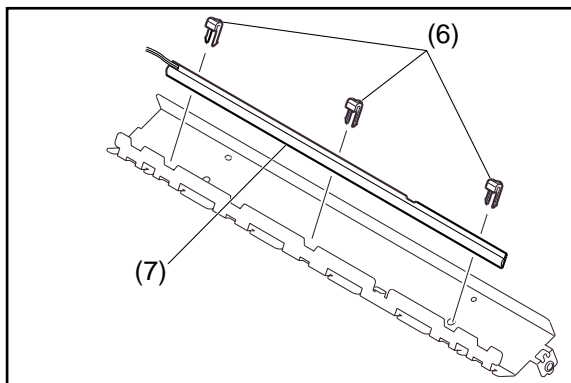


Cleaning Mirror 1 (334), Mirror 2 (335) and Mirror 3 (336)
Clean **Mirror 1 (334)**, **Mirror 2 (335)** and **Mirror 3 (336)** with a soft cloth, soaked with isopropyl alcohol.

2.10 A4 LED Array (329), Feed Roller (302)



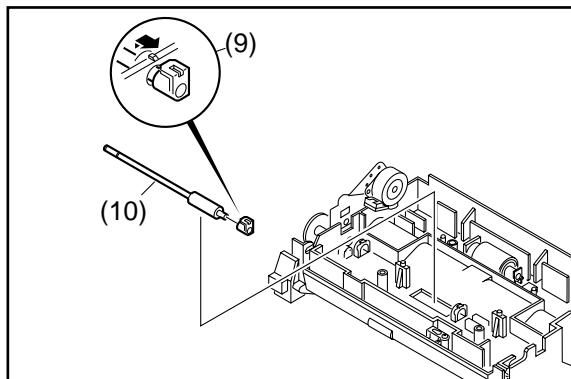
- (1) Remove the **Scanner Block** (321) (Refer to 2.9).
- (2) Remove the **Ground Plate** (317).
- (3) 3 **Screws** (19).
- (4) Release the Harness from the hook.
- (5) Remove the **LED Bracket** (306) **Assembly**.



- (6) Remove 3 **LED Clips** (307).
- (7) Remove the **A4 LED Array** (329).

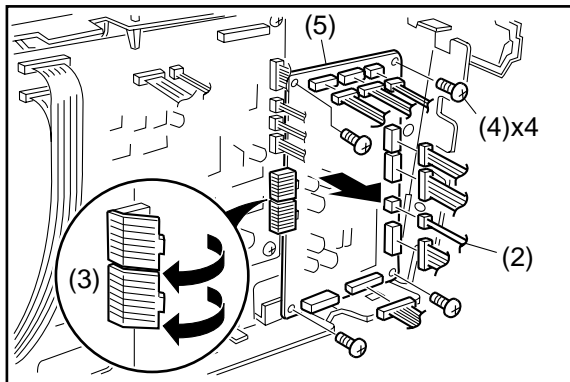
Caution:

When reinstalling the A4 LED Array, position the 3 LED Clips at the appropriate locations.

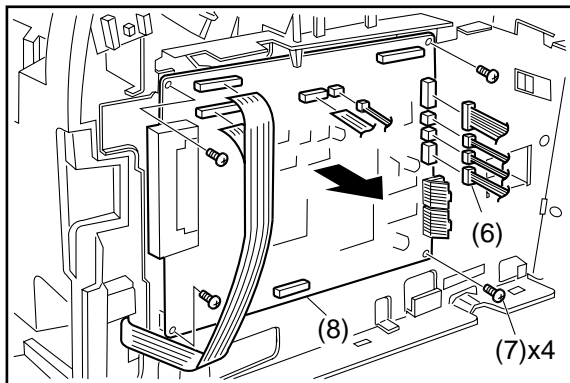


- (8) Remove the **Gears, Bushings** and the **Roller Wire Spring** (Refer to 2.7).
- (9) Remove 2 **P6A Bushings** (316).
- (10) Remove the **Feed Roller** (302).

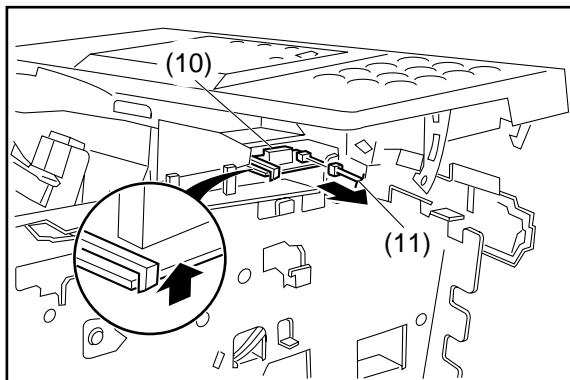
2.11 LPC PC Board (401), SCA/SCB PC Board (422), ILS PC Board (425), SNS4 PC Board (729)



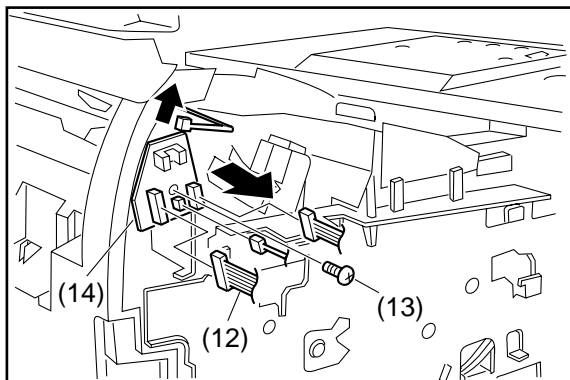
- (1) Remove the **Left Cover** (Refer to 2.3).
- (2) Disconnect all **Connectors** on LPC PC Board (401).
- (3) Release **Connectors CN50** and **CN67** with your finger as shown in the illustration.
- (4) 4 **Screws** (19).
- (5) Remove the **LPC PC Board** (401),



- (6) Disconnect all **Connectors** and the **Flat Cables** on SCA/SCB PC Board.
- (7) 4 **Screws** (19).
- (8) Remove the **SCA/SCB PC Board** (422).

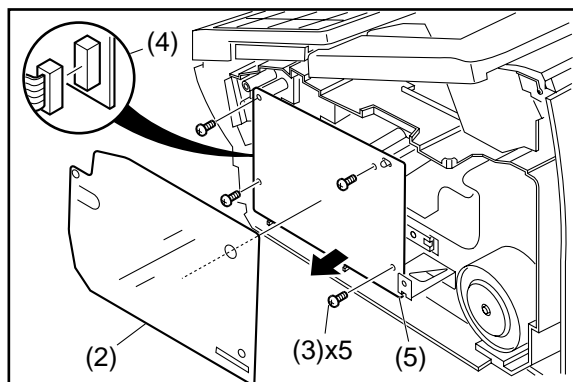


- (9) Move all Harnesses away from the front of the Door Sensor.
- (10) Release the Latch Hook and remove the **ILS PC Board** (425).
- (11) Disconnect **Connector CN73** on the ILS PC Board.

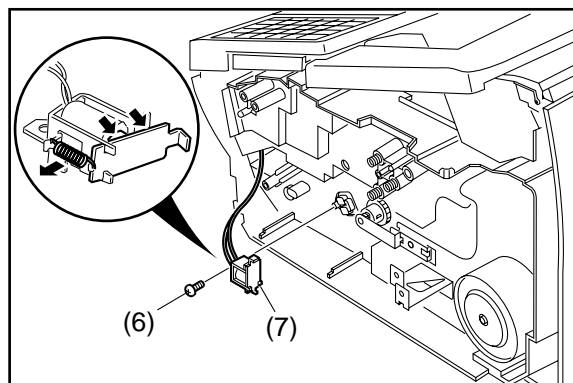


- (12) Disconnect **Connectors CN85, 86 and 87** on the SNS4 PC Board.
- (13) 1 **Screw** (19).
- (14) Lift up the **Paper Exit Actuator** (730) and remove the **SNS4 PC Board** (729).

2.12 High Voltage Power Supply Unit (424), Paper Feed Solenoid (531), Clutch Gear Assembly (530), Paper Feed Roller (518)



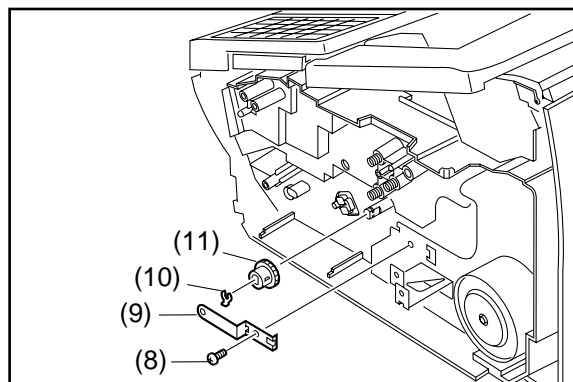
- (1) Remove the **Right Cover** (102) (Refer to 2.3).
- (2) Remove the **HVPS Sheet** (408).
- (3) 4 **Screws** (19).
- (4) Disconnect **Connector CN39** on the the HVPS Unit.
- (5) Remove the **HVPS Unit** (424).



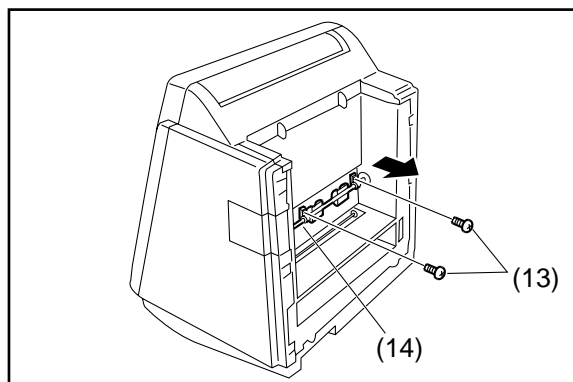
- (6) 1 **Screw** (19).
- (7) Remove the **Paper Feed Solenoid** (531).

Note:

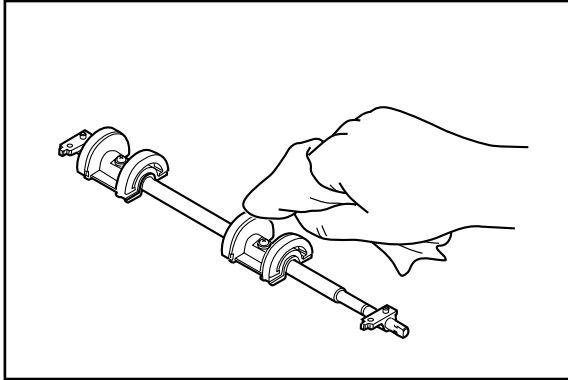
If the Paper Feed Solenoid does not work properly due to dust, etc. remove the spring to disassemble and clean the magnet and plate as shown in the illustration.



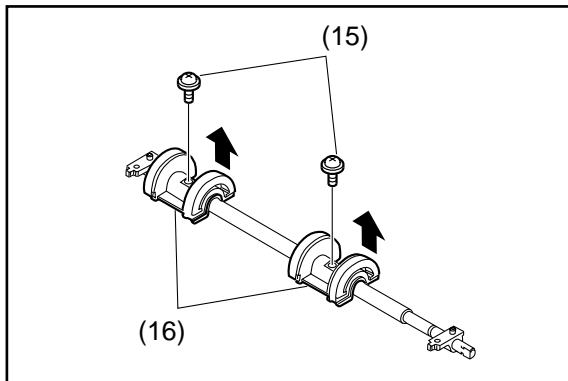
- (8) 1 **Screw** (19).
- (9) Remove the **Feed Roller Ground Spring** (628).
- (10) Remove the **E-Ring** (524).
- (11) Remove the **Clutch Gear Assembly**.



- (12) Place the machine on its **Rear side**.
- (13) 2 **Screws** (19).
- (14) Remove the **Feed Roller Assembly**.



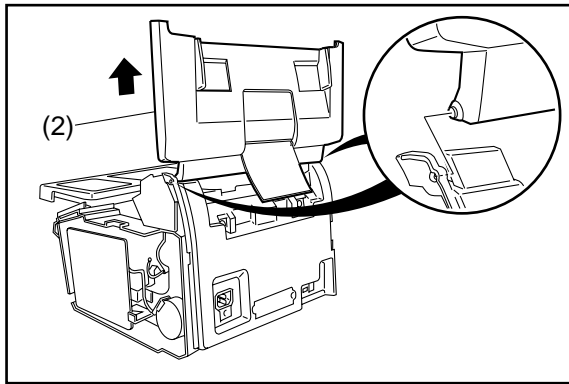
Clean the **Paper Feed Rollers** (518) with a soft cloth, soaked with isopropyl alcohol.



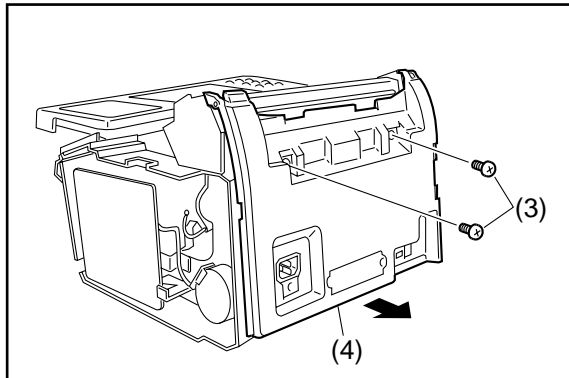
(15) 2 **Screws** (4N).

(16) Remove the **Paper Feed Rollers** (518).

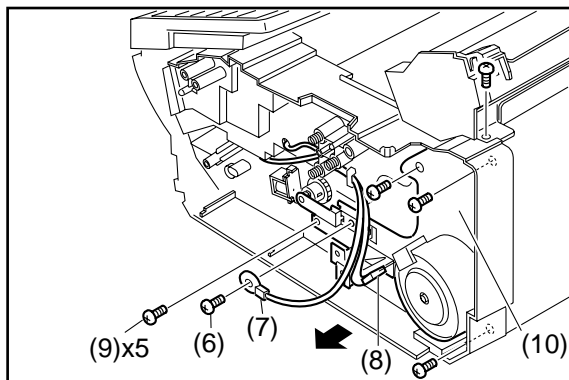
2.13 Printer Cover (106), Rear Cover (105), Printer Motor (626)



- (1) Remove the **Left Cover** and the **Right Cover** (Refer to 2.3).
- (2) Release the hooks and remove the **Printer Cover** (106).



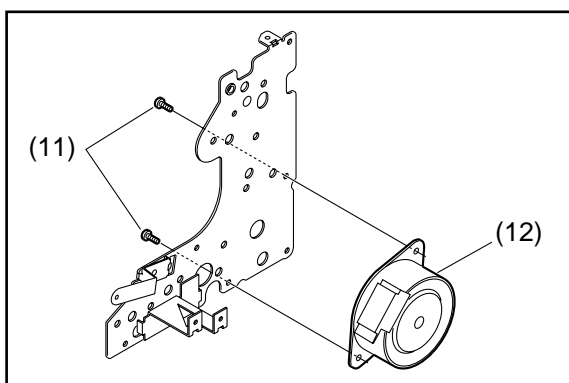
- (3) 2 **Screws** (B1).
- (4) Remove the **Rear Cover** (105).



- (5) Remove the **HVPS Unit** (424) (Refer to 2.12)
- (6) 1 **Screw** (19).
- (7) Remove the **Ground Wire** (542).
- (8) Remove the **Feed Roller Ground Spring** (628).
- (9) Remove the **Connector** on the Printer Motor.
- (10) 5 **Screws** (19).
- (11) Remove the **Motor Bracket** (616) **Assembly**.

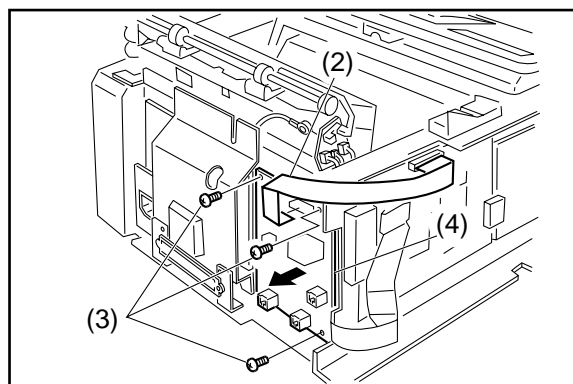
Caution:

The Gears underneath may dislodge when the Motor Bracket is removed.

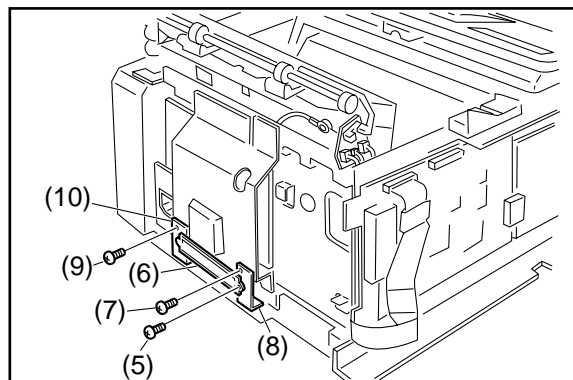


- (12) 2 **Screws** (4N).
- (13) Remove the **Printer Motor** (626).

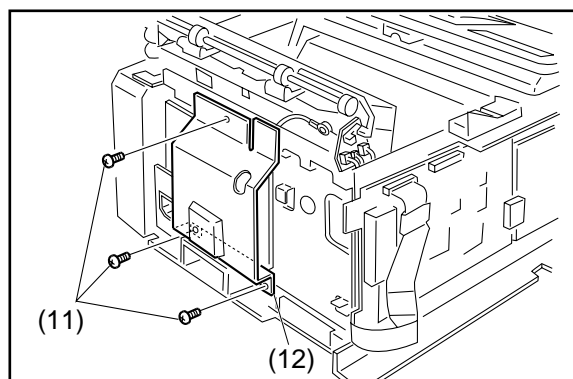
2.14 LCU PC Board (402), Low Voltage Power Supply Unit (423)



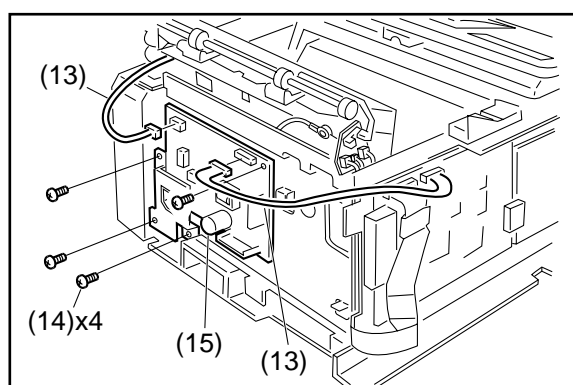
- (1) Remove the **Rear Cover** (105) (Refer to 2.13).
- (2) Remove the **Flat Cable** from the **Connector CN25** on the LCU PC Board.
- (3) 3 **Screws** (B5).
- (4) Remove the **LCU PC Board** (402).



- (5) 1 **Screw** (B1).
- (6) Remove the **Parallel Port I/F Cover** (113).
- (7) 1 **Screw** (19).
- (8) Remove the **Right Printer I/F Bracket** (406).
- (9) 1 **Screw** (19).
- (10) Remove the **Left Printer I/F Bracket** (405).



- (11) 3 **Screws** (19).
- (12) Remove the **LVPS Protection Cover** (404).

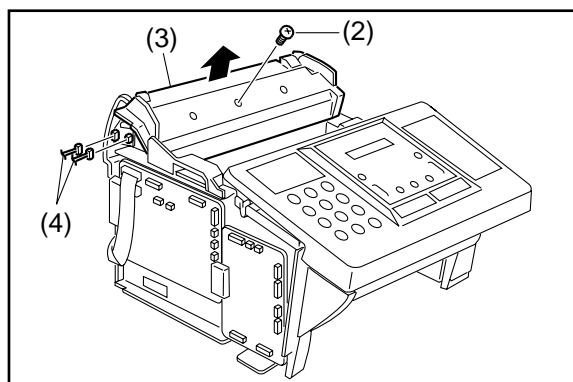


- (13) Disconnect **Connectors CN31** and **CN33** on the LVPS Unit.
- (14) 4 **Screws** (19).
- (15) Remove the **LVPS Unit** (423).

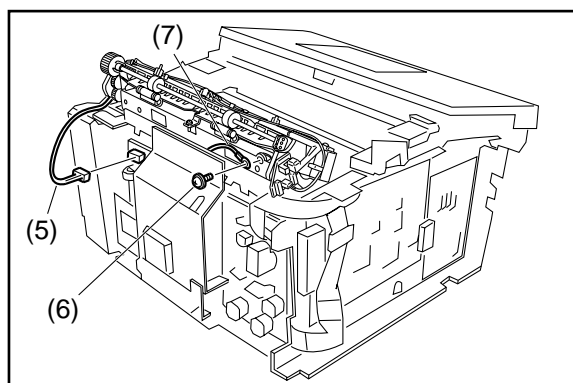
2.15 Fuser Unit (701), Thermistor Assembly (728)

CAUTION:

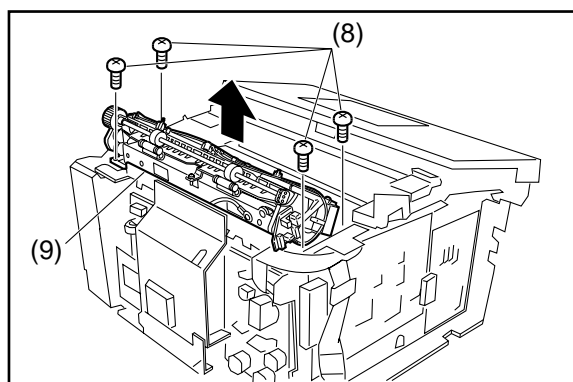
To prevent getting burned, do not install, remove, clean or adjust when the Fuser Unit is hot.



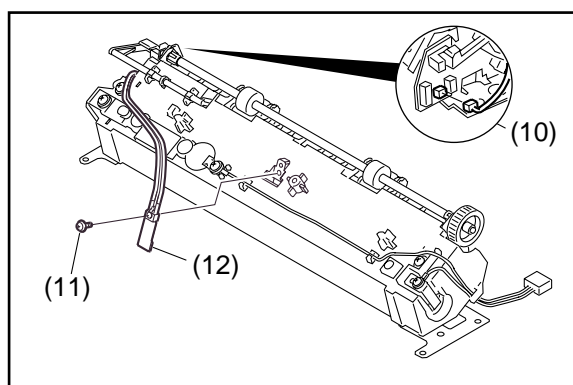
- (1) Remove the **Rear Cover** (Refer to 2.13).
- (2) 1 **Screw** (19).
- (3) Remove the **Fuser Top Cover** (733).
- (4) Disconnect **Connectors CN85** and **CN87** on the SNS4 PC Board (729).



- (5) Disconnect **Connector CN31** on LVPS Unit (423).
- (6) 1 **Screw** (4N).
- (7) Remove the **FG1 Harness** (629).



- (8) 4 **Screws** (19).
- (9) Remove the **Fuser Unit** (701).

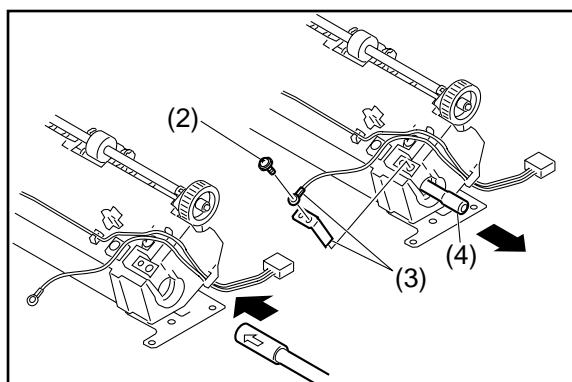


- (10) Disconnect **Connector CN86** on the SNS4 PC Board (729).
- (11) 1 **Screw** (1Q).
- (12) Remove the **Thermistor Assembly** (728).

Caution:

The Thermostat and Thermal Fuse are not available as Spare Parts. If they become defective, replace the entire Fuser Unit.

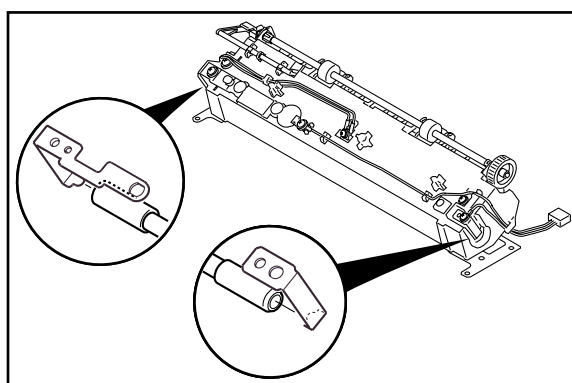
2.16 Fuser Lamp (732), Exit Roller (719), Fuser Roller (709), Pressure Roller (706)



- (1) Remove the **Rear Cover** (Refer to 2.13) and the **Fuser Unit** (Refer to 2.15).
- (2) 1 **Screw** (4N).
- (3) Remove the **LVPS-Fuser Harness** (727) and **Fuser Lamp Terminal B** (731).
- (4) Remove the **Fuser Lamp** (732).

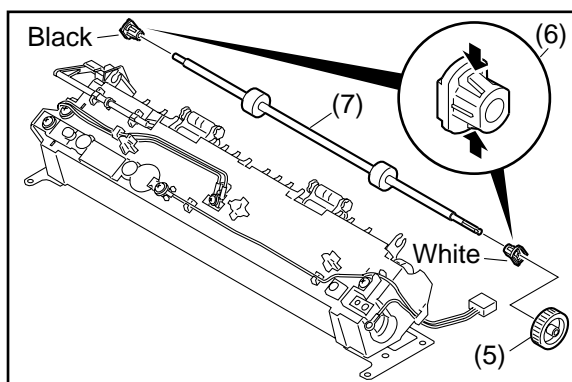
Caution:

When reinstalling the Fuser Lamp, make sure that the Fuser Lamp is inserted into the Fuser Unit as illustrated. Do not touch the glass portion of the Fuser Lamp with bare hands. Grease from fingerprints will shorten its life cycle, use isopropyl alcohol to clean fingerprints.



Caution:

When reinstalling the Fuser Lamp, make sure that both ends of the Fuser Lamp fits into the projected area of the **Fuser Lamp Terminal A** (724) and the **Fuser Lamp Terminal B** (731).

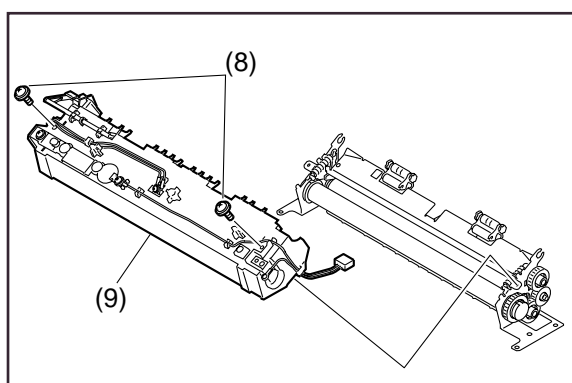


- (5) Remove the **E22 Gear** (722).

Caution:

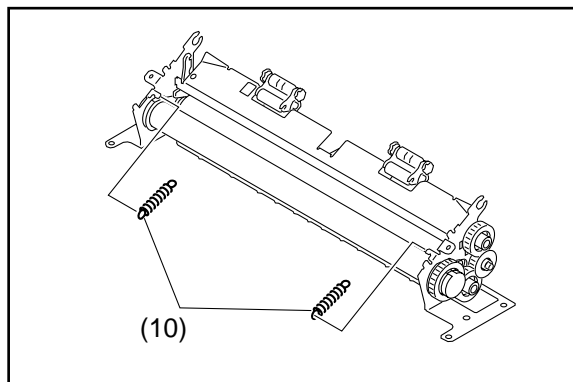
You may need to use force to pull out the Gear.

- (6) Remove the **Right** and **Left P3.5L11.2 Bushings** (720 and 721).
- (7) Remove the **Exit Roller** (719).

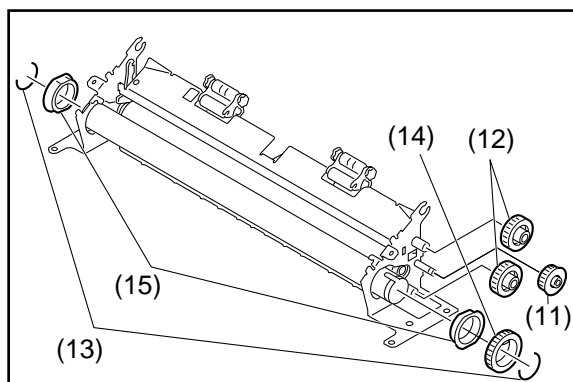


- (8) 2 **Screws** (4N).

- (9) Remove the **Fuser Cover** (723).



(10) Remove 2 **Pressure Springs** (708).



(11) Remove the **E14 Gear** (714).

Caution:

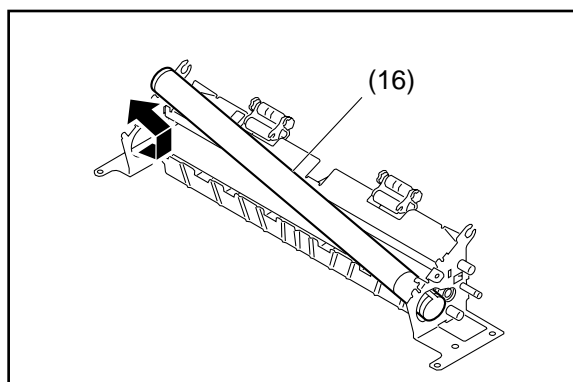
You may need to use force to pull out the Gear.

(12) Remove the 2 **E18 Gears** (713).

(13) Remove 2 **C-Rings** (712).

(14) Remove the **E24 Drive Gear** (711).

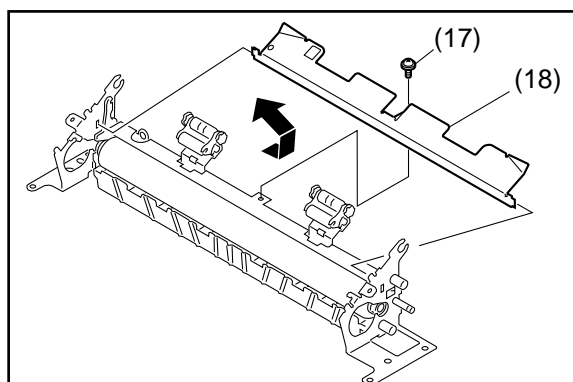
(15) Remove 2 **P17L6.8 Bushings** (710).



(16) Remove the **Fuser Roller** (709).

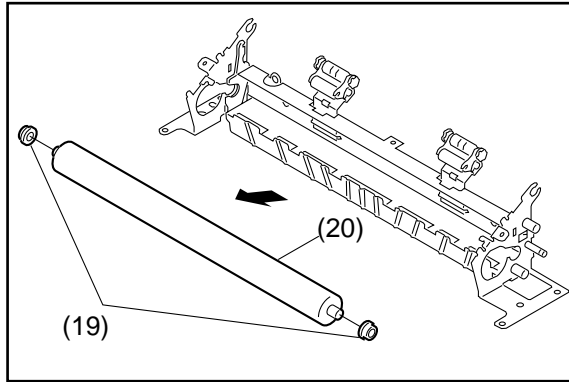
Caution:

Do not scratch the surface of the Fuser Roller when removing or reinstalling it.



(17) 1 **Screw** (4N).

(18) Remove the **Lower Paper Exit Guide** (703).



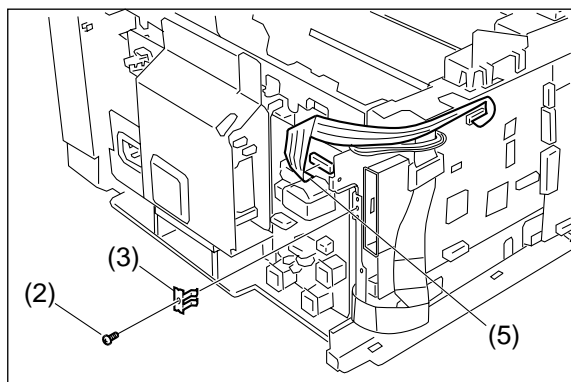
(19) Remove 2 **P6L5.5 Bushings** (707).

(20) Remove the **Pressure Roller** (706).

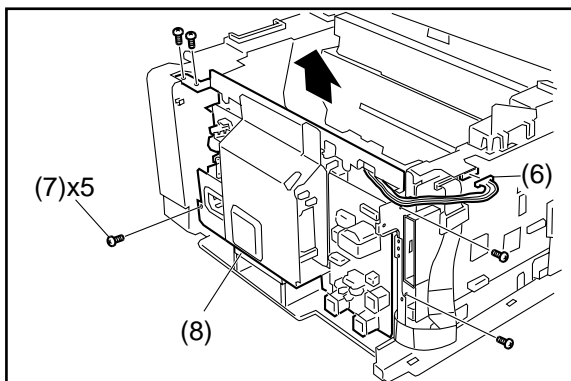
Caution:

Do not scratch the surface of the Pressure Roller when removing or reinstalling it.

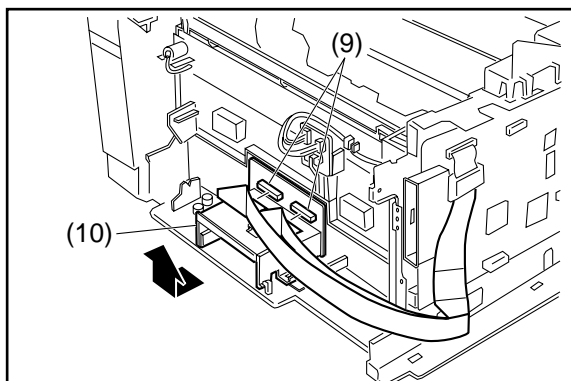
2.17 Rear Chassis (505), PRTA PC Board (536), SNS1 PC Board (615)



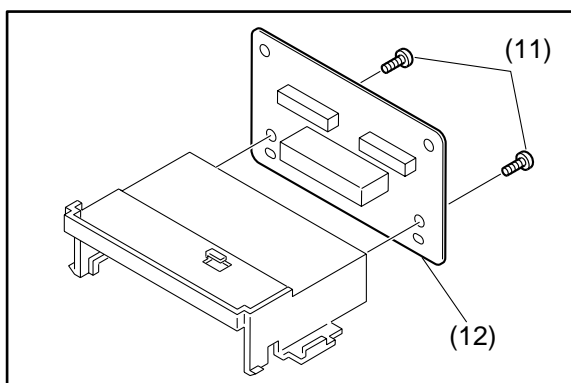
- (1) Remove the **Fuser Unit** (701) (Refer to 2.15).
- (2) 1 **Screw** (19).
- (3) Remove the **Memory Card Ground Plate** (516).
- (4) Remove the **Parallel Port I/F Cover** (113), **Left and Right Printer I/F Brackets** (405, 406) (Refer to 2.14).
- (5) Disconnect Connector **CN25** on the LCU PC Board (402).



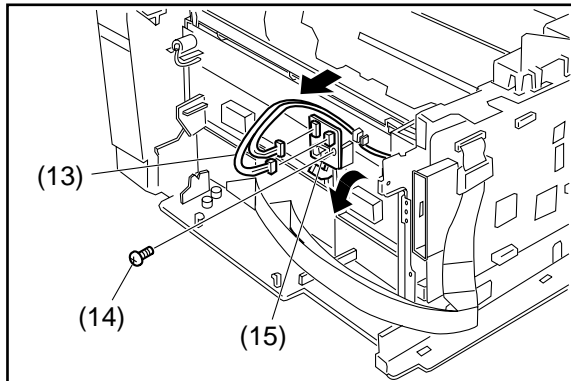
- (6) Disconnect **Connector CN6** on the SCA/SCB PC Board (422).
- (7) 5 **Screws** (19).
- (8) Remove the **Rear Chassis (505) Assembly**.



- (9) Disconnect **SCA/SCB-PRTA Flat Cables** (421) on the PRTA PC Board (536).
- (10) Release the Latch Hooks and remove the **Printer I/F PCB Guide (532) Assembly**.

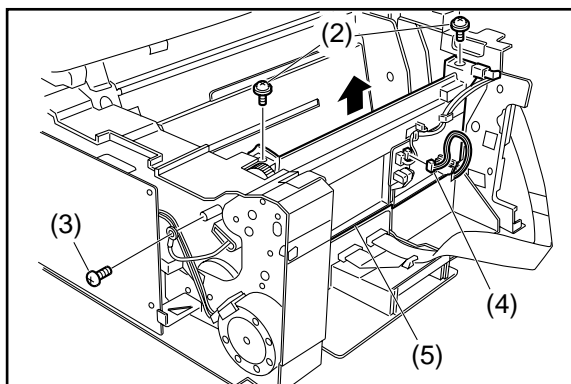


- (11) 2 **Screws** (19).
- (12) Remove the **PRTA PC Board** (536).

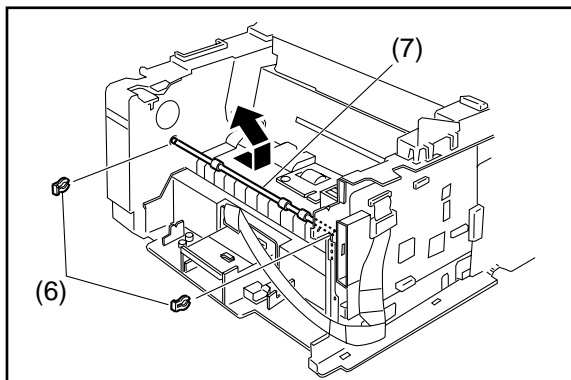


- (13) Disconnect **Connectors CN80** and **CN81** on the SNS1 PC Board (615).
- (14) 1 **Screw** (19).
- (15) Remove the **SNS1 PC Board** (615).

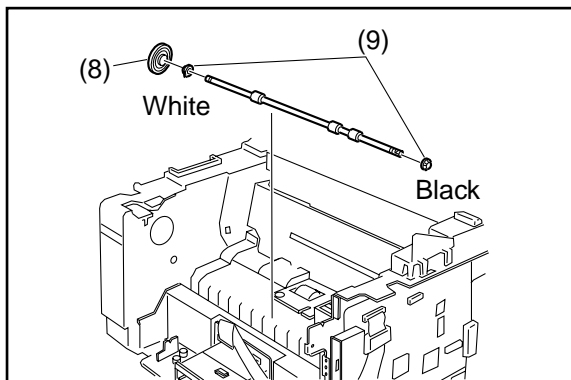
2.18 Transfer Guide (601) Assembly, Feed Roller (526)



- (1) Remove the **Rear Chassis** (Refer to 2.17).
- (2) 2 **Screws** (C8).
- (3) 1 **Screw** (19).
- (4) Disconnect Connector **CN80** on the SNS1 PC Board (615).
- (5) Remove the **Transfer Guide (601) Assembly**.

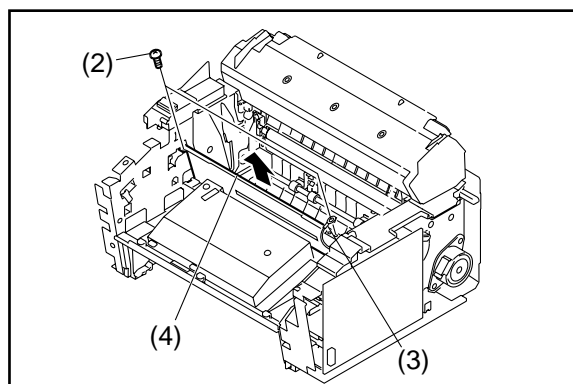


- (6) Remove the 2 **E-Rings**. (524).
- (7) Remove the **Feed Roller (526)**.

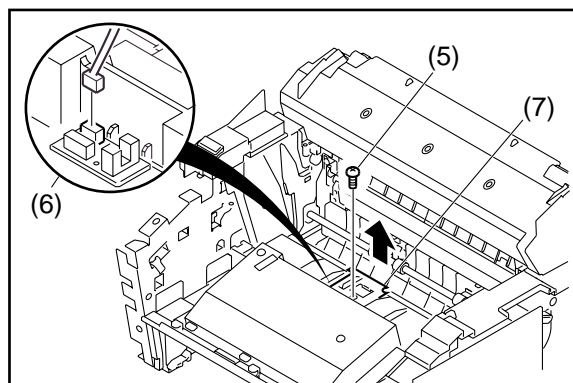


- (8) Remove the **Roller Gear (529)**.
- (9) Remove 2 **P6L5 Bushings (527, 528)**.

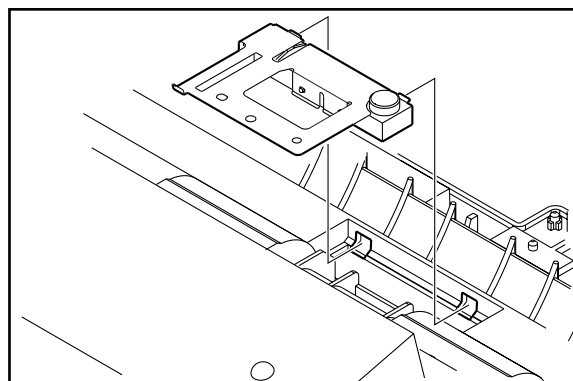
2.19 Toner Sensor (513), Laser Unit [LSU] (512), SNS3 PC Board (535)



- (1) Remove the **Transmit Guide Assembly** (Refer to 2.5).
- (2) 2 **Screws** (19).
- (3) Remove **Ground Wire** (542).
- (4) Remove the **CCD Shield Plate** (533).

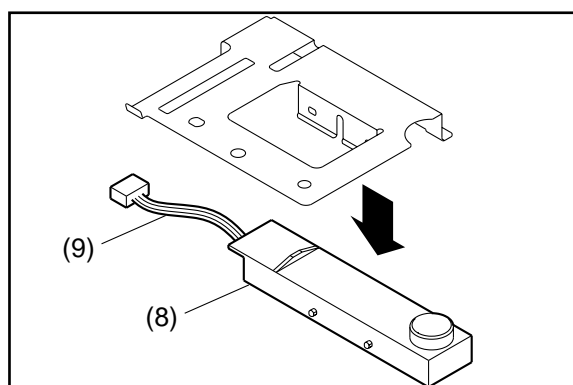


- (5) 1 **Screw** (19).
- (6) Disconnect Connector **CN84** on the SNS3 PC Board.
- (7) Remove the **Toner Sensor Spring Plate** (506) **Assembly**.

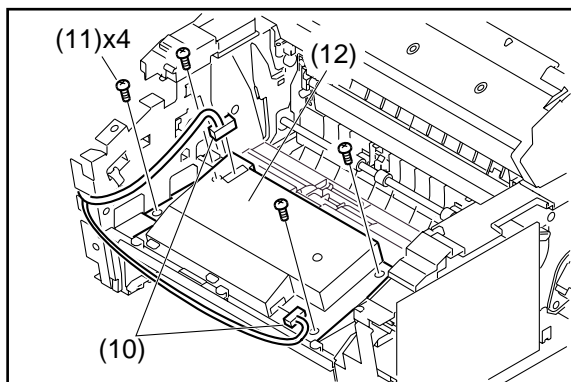


Note:

When reinstalling, make sure that the Toner Sensor Spring Plate is inserted into the 2 notches in the main frame as shown in the illustration.



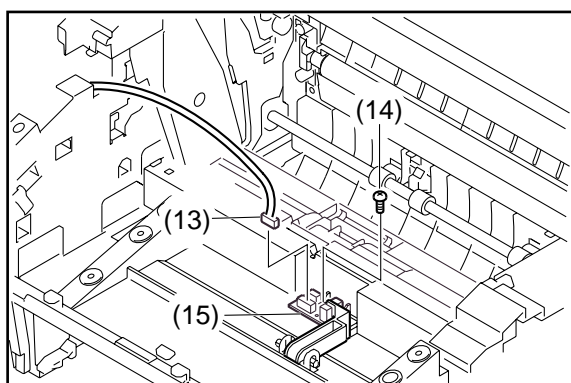
- (8) Remove the **Toner Sensor** (513).
- (9) Disconnect the **Connector** on the Toner Sensor.



(10) Disconnect 2 **Connectors** on the **Laser Unit** (512).

(11) 4 **Screws** (1Y).

(12) Remove the **Laser Unit** (512).

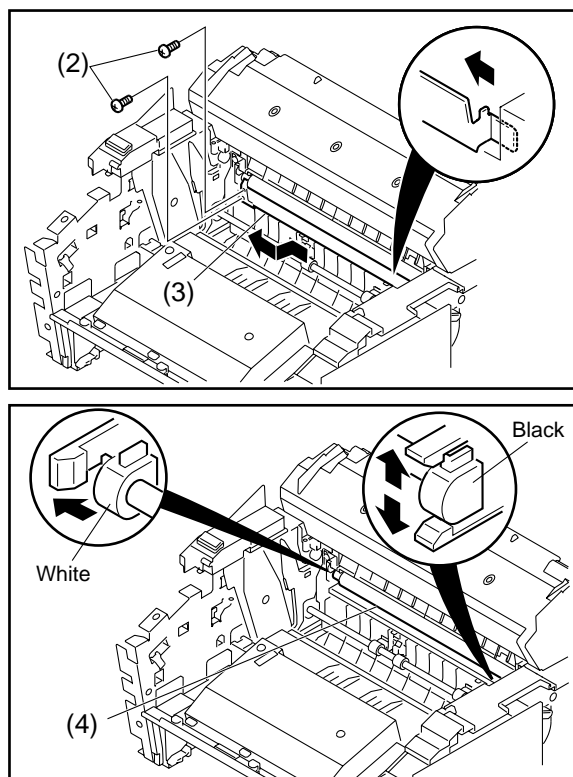


(13) Disconnect Connectors **CN83** and **CN84** on the SNS3 PC Board (535).

(14) 1 **Screw** (19).

(15) Lift up the **No Paper Actuator** (525) and Remove the **SNS3 PC Board** (535).

2.20 Bias Transfer Roller (604)



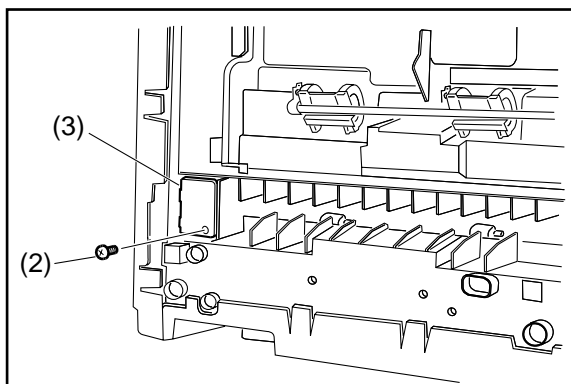
- (1) Remove the **CCD Shield Plate** (Refer to 2.19).
- (2) 2 **Screws** (19).
- (3) Remove the **BTR Guide** (602).

- (4) Release the Latch Hook on the **Transfer Guide** (601) **Assembly** as illustrated and remove the **Bias Transfer Roller** (604).

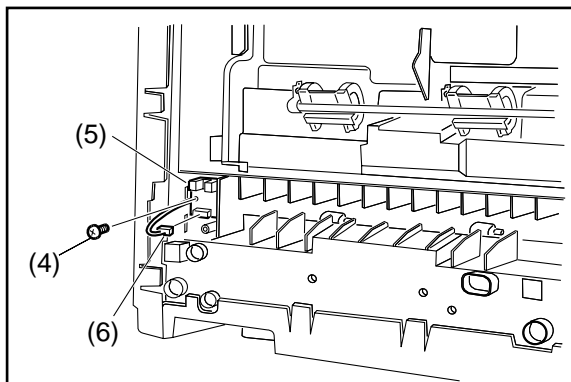
Caution:

- Do not touch the surface of the Bias Transfer Roller. Clean the Bias Transfer Roller only with a dry cloth.
- When cleaning or replacing the Bias Transfer Roller, clean both sides of the Transfer Guide with isopropyl alcohol.

2.21 SNS2 PC Board (534)

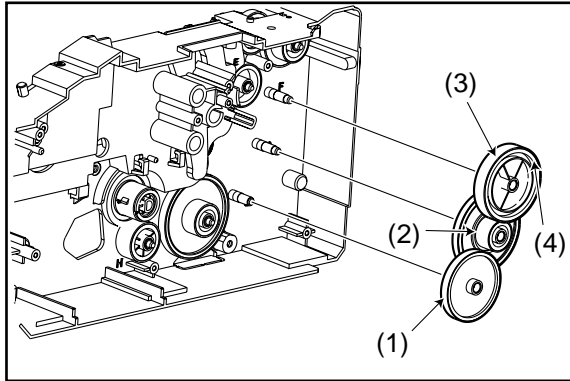


- (1) Place the machine on its rear side.
- (2) 1 **Screw** (19).
- (3) Remove the **Plate A** (507).



- (4) 1 **Screw** (19).
- (5) Remove the **SNS2 PC Board** (534).
- (6) Disconnect **Connector CN82** (538) on the SNS2 PC Board.




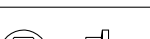
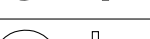
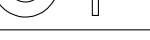





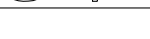

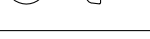

2.22 Printer Grease Points



Before reassembling, apply EM-50L Grease to the parts shown in the illustration.

- (1) **Gear G, B83D22 (622)** : Gear surface
- (2) **Gear B, D60D20 (621)** : Rib surface
- (3) **Gear F, D55 (619)** : Gear surface
- (4) **Gear F, D55 (619)** : Gear Side surface

2.23 Screw Identification Template

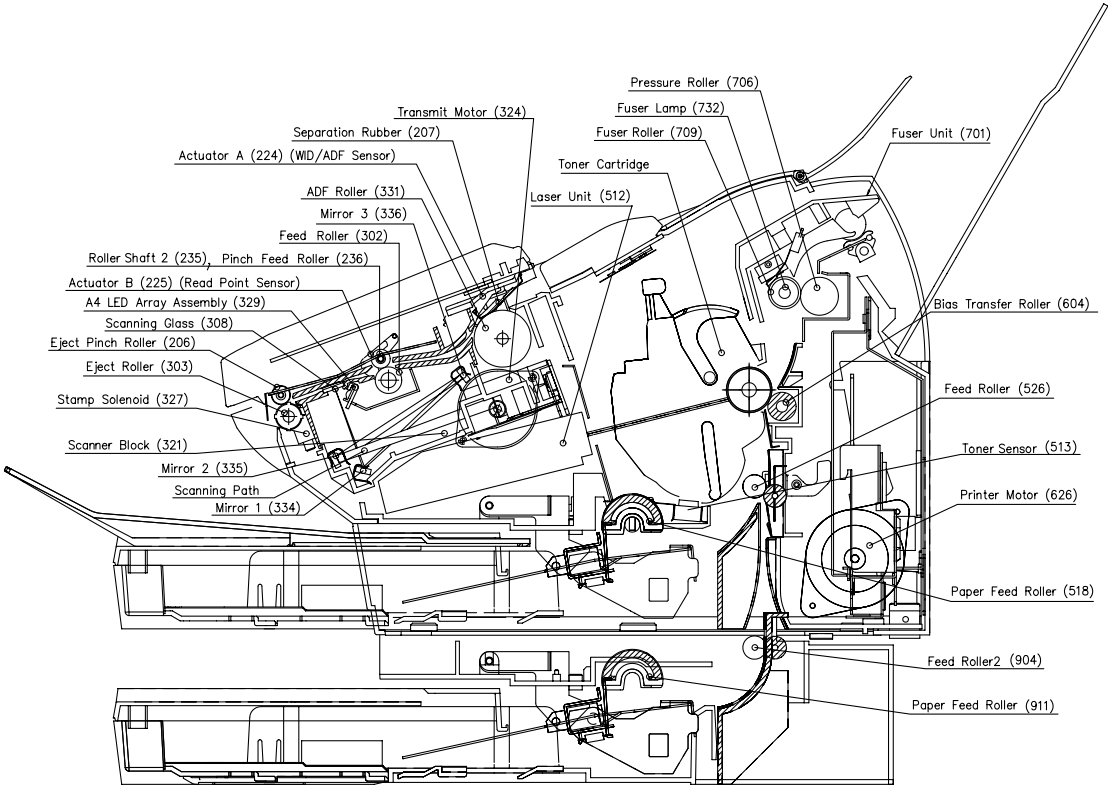
Ref No.	Part No.	Figure	Remark
19	XTB3+8J		Screw
23	XYN3+F8		Screw
35	XYN4+F6		Screw
430	DZPF000001		Nut
652	DZPK000001		Washer
1Q	XYN3+F 10		Screw
1Y	XTB3+10J		Screw
4N	XSN3+W8FC		Screw
5Y	XUC4		E-Ring
5Z	XUC6		E-Ring
7B	XTB26+6J		Screw
B1	DZPB000007		Screw
B5	XSB4+10BN		Screw
C8	XTW3+8SFC		Screw
-	DZPA000013		Red Colored Screw

3 Maintenance, Adjustments and Check Points

3.1 Required Tools

No.	Tool	No.	Tool
1	Soft Cloth	6	Tweezer
2	Isopropyl Alcohol	7	Pliers
3	Phillips Screwdriver (#2)	8	Cotton Swab
4	Stubby Phillips Screwdriver (#2)	9	Brush
5	Blade-tip Screwdriver (3/32 in)	10	Molykote EM-50L Grease (Dow Corning)

3.2 Periodic Maintenance Points



3.3 Periodic Maintenance Check List

The chart outlined below is a general guideline for maintenance. The example list is for an average usage of 50 transmitted and received documents per day. Needless to say, the environmental conditions and actual use will vary these factors.

The chart below is for reference only.

	Parts Description	Cleaning		Replacement / Adjustment	
		Cycle	Method	Cycle	Method
Receiver Unit	Printer Motor (626)	-		100,000 documents	Page 36
	Toner Cartridge	-	-	approx 7,500 pages (See Note)	
	Paper Feed Roller (518)(911)	12 months or 10,000 documents	Page 34	30,000 documents	Page 34
	Feed Roller (526) (904)	12 months or 10,000 documents	Page 44	-	
	Bias Transfer Roller (604)	12 months or 10,000 documents	Page 47	30,000 documents	Page 47
	Fuser Unit (701)	When replacing Print Cartridge	Cleaning chart	50,000 documents	Page 38
	Fuser Roller (709)	When the Recording Paper wraps itself around the roller.	Page 39	(Included as part of the Fuser Unit)	Page 39
	Pressure Roller (706)	When the Recording Paper wraps itself around the roller.	Page 39	(Included as part of the Fuser Unit)	Page 39
Transmitter Unit	Roller Shaft 2 (235)	30,000 documents	Page 24	-	
	Feed Pinch Roller (236) * Shaft Hole	30,000 documents	Page 24	-	
	ADF Roller (331)	12 months or 10,000 documents	Page 26	30,000 documents	Page 31
	Separation Rubber (207)	12 months or 10,000 documents	Page 23	30,000 documents	Page 23
	Feed Roller (302)	12 months or 10,000 documents	Page 26	30,000 documents	Page 32
	Eject Roller (303)	12 months or 10,000 documents	Page 26	30,000 documents	Page 28
	Scanning Glass (308)	12 months or 10,000 documents	Page 26	-	
	Mirrors (334, 335, 336)	12 months or 10,000 documents	Page 31	-	
	Transmit Motor (324)	-		100,000 documents	Page 30
	"x" Stamp Head (325)	-		5,000 documents	Page 27

Note:

The number of pages is based on the ITU-T Image No. 1 test chart at Multi-Copy mode.

Operation environment 20°C, 50%RH.

3.4 Updating the Firmware

Unlike other machines with removable EPROM (Erasable Programmable ROM), this machine is equipped with an F-ROM (Flash ROM). F-ROM offers the flexibility of quick and easy firmware updates, creation of a master firmware card, backup and restore of firmware and machine parameters.

The following is the basic procedure to update the firmware of the machine. The details are described in the Firmware Update Kit User's Guide.

3.4.1 Creating a Master Firmware Card

A. Utilizing the Firmware Update Kit.

1. Install the Firmware Update Kit. (Order No.: UE-406052)
2. Install a Flash Memory Card (2 MB or higher) into the machine.
3. Follow the instructions included in the Firmware Update Kit User's Guide.

B. Copy the Firmware from an Existing Machine

1. Unplug the Power Cord to turn the machine OFF.
2. Install a Flash Memory Card (2 MB or higher) into the machine with the Panasonic Logo facing outwards.
3. Plug in the Power Cord to turn the machine ON.
4. Perform the Service Mode 9-2 (Firmware Backup).
5. The firmware is copied into the Flash Memory Card.
6. After the backup is completed, press "STOP" to return to standby.
7. Unplug the Power Cord to turn the machine OFF.
8. Remove the Master Firmware Card that you just created from the machine.
9. Plug in the Power Cord to turn the machine ON.
10. Use this Master Firmware Card to update the firmware on other machines.

3.4.2 Updating the Firmware using the Master Firmware Card

1. Before starting, print the Fax and Function Parameter Lists.
2. Unplug the Power Cord to turn the machine OFF.
3. Install the appropriate Master Firmware Card into the machine with the Panasonic Logo facing outwards.
4. Plug in the Power Cord to turn the machine ON.
5. Perform the Service Mode 9-1 (Firmware Update).
6. The firmware is copied into the machine.
7. After the update is completed, the machine reboots itself and returns to standby.
8. Perform the Service Mode 6 (Parameter Initialization).
9. Unplug the Power Cord to turn the machine OFF.
10. Remove the Master Firmware Card from the machine.
11. Plug in the Power Cord to turn the machine ON.
12. Reprogram the Fax and/or Function Parameters according to the lists printed in Step 1 above if the settings are other than factory default.

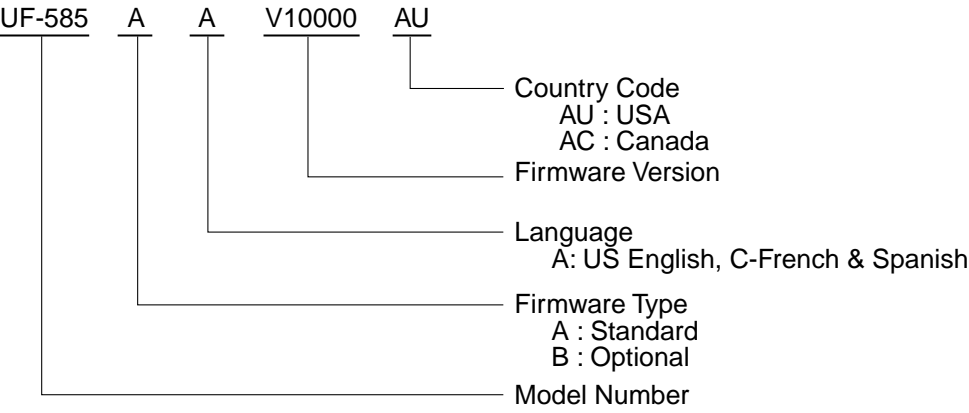
3.4.3 Erasing the Master Firmware Card

1. Unplug the Power Cord to turn the machine OFF.
2. Install the Master Firmware Card into the machine with the Panasonic Logo facing outwards.
3. Plug in the Power Cord to turn the machine ON.
4. Perform the Service Mode 9-5 (PC → Flash Card).
5. The firmware is erased from the card and the following message is shown on the display:

READY TO PROGRAM
PRESS SET TO START

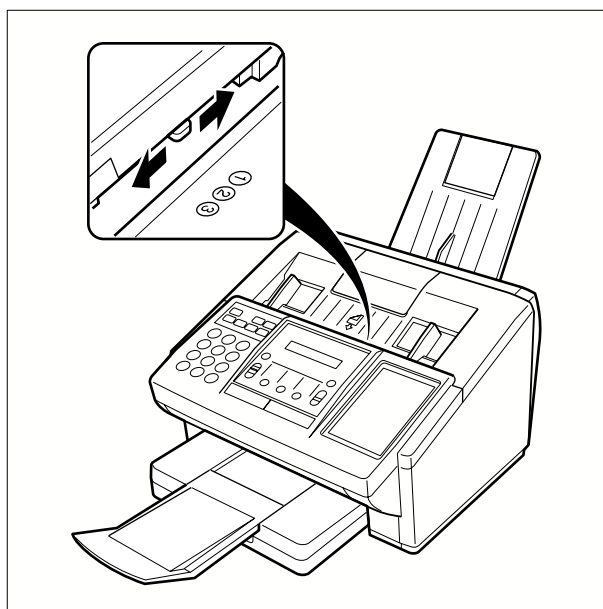
6. Press "STOP" twice to return to standby.
7. Unplug the Power Cord to turn the machine OFF.
8. Remove the blank Flash Memory Card from the machine.
9. Plug in the Power Cord to turn the machine ON.

3.4.4 **Firmware Version**



3.5 ADF Pressure

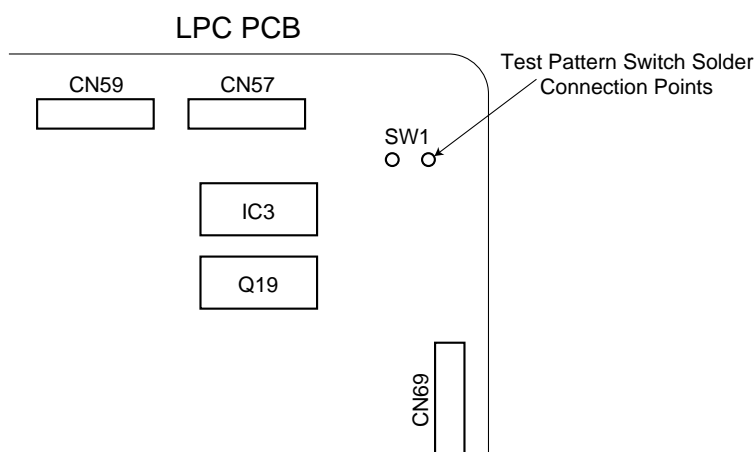
- When documents multi-feed, move the pressure Adjusting Lever to the 3 (H) position.
- When documents do not feed properly, move the Pressure Adjusting Lever to the 1 (L) position.



Position	Pressure of separator	Situation
1 (L)	Low	When the documents misfeed
2 (M)	Medium	Normal Position (Factory set position)
3 (H)	High	When the documents multi-feed

3.6 Printer Unit Test

1. Short the Test Pattern Print Switch (SW1) solder connection points on the LPC PCB as shown below.



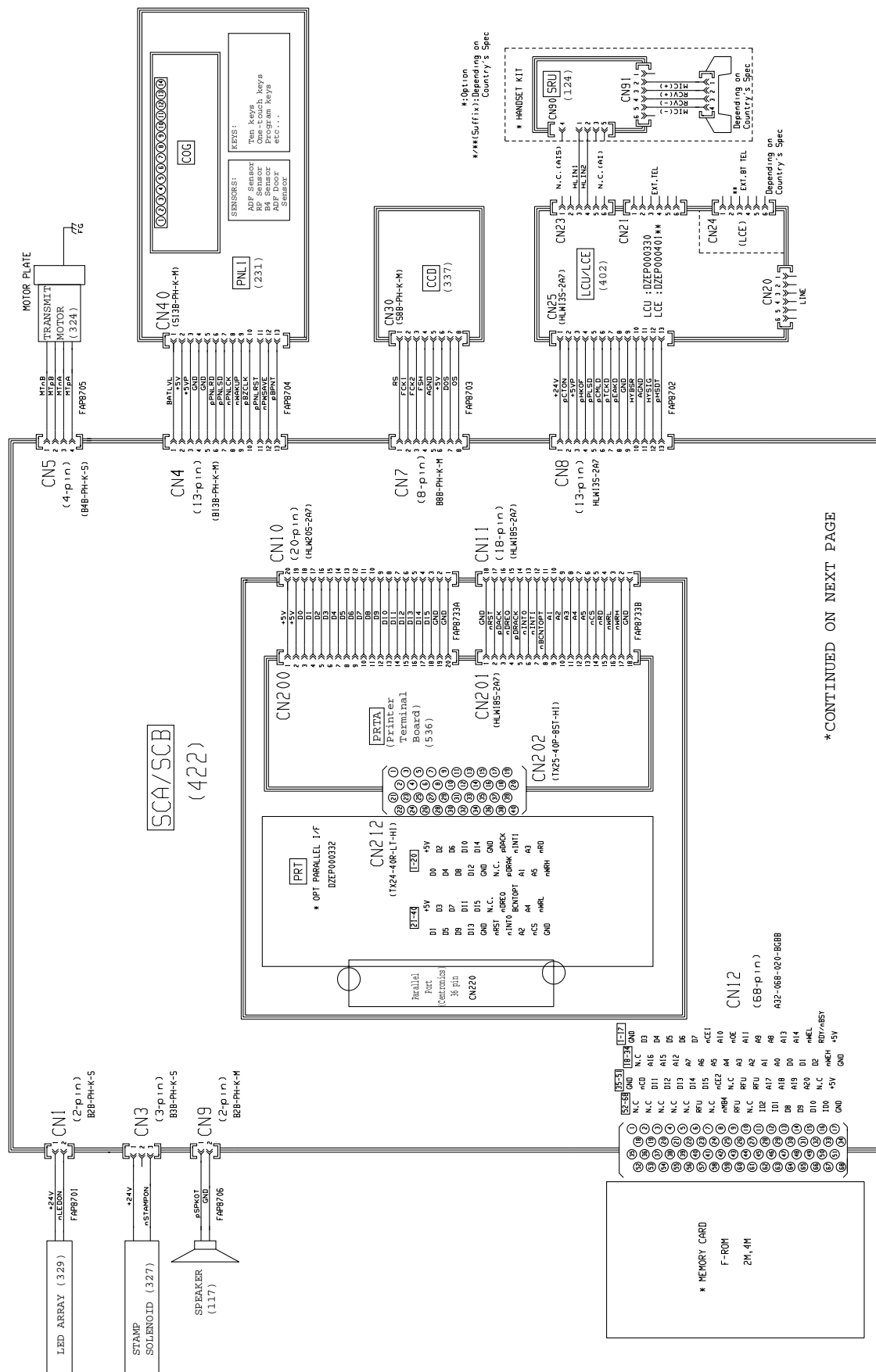
	Pattern	Selection method	Stop method
Pattern 0	1-dot Horizontal line	Short SW1 solder connection points for less than 2 seconds (400 dpi printing)	Short SW1 solder connection points again for less than 2 seconds
		Short SW1 solder connection points for 2 seconds or more (600 dpi printing)	
Pattern 1	Blank page	Short SW1 solder connection points for 2 seconds or more while the Pattern 0 is printing	Short SW1 solder connection points again for less than 2 seconds

2. The Test Pattern prints. Check the print Quality.

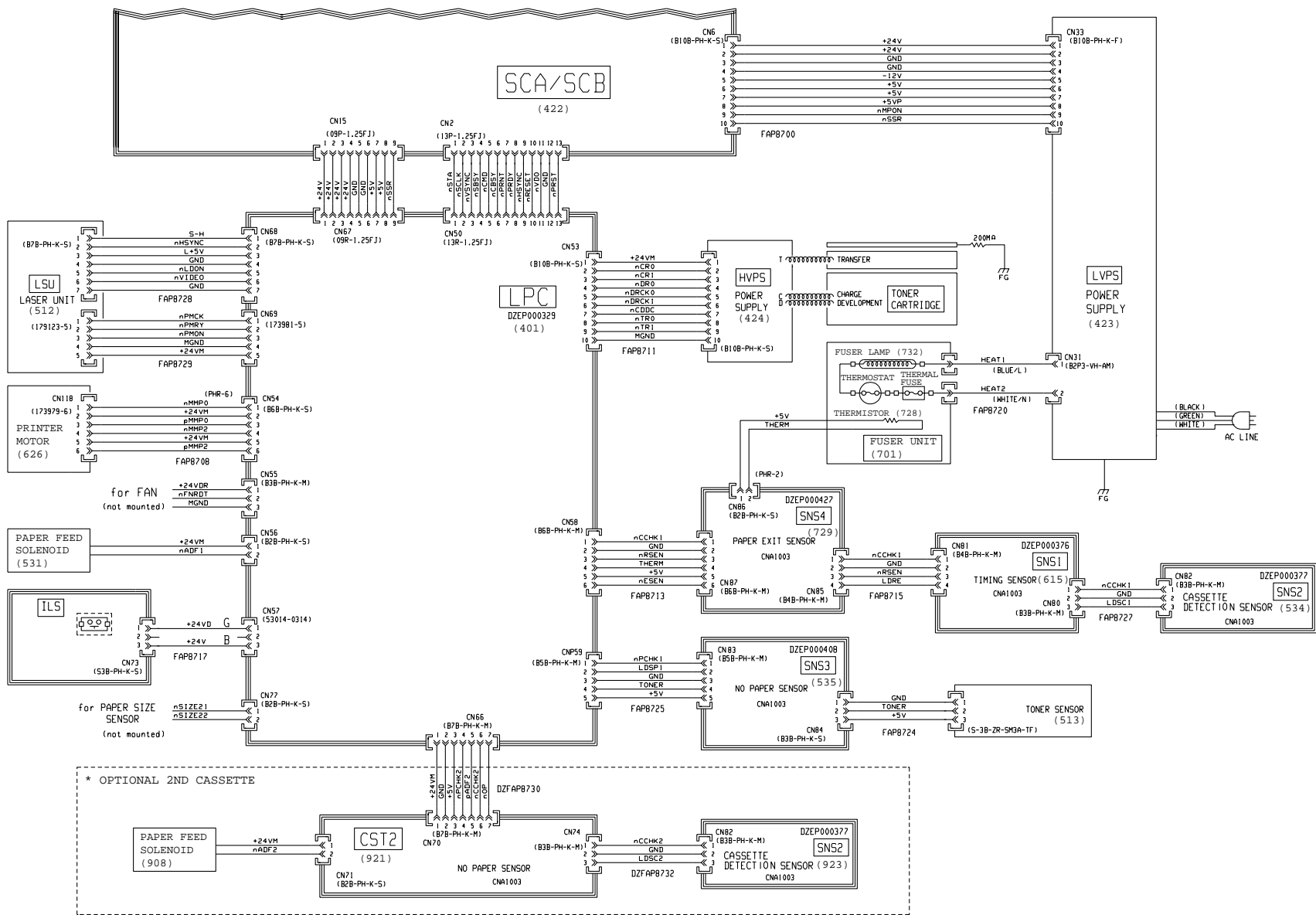
Note:
When the unit is in Sleep Mode, Fax Parameter No. 34 (Power Saver Timer) is ON, the unit will not print the test pattern. Press any key on the control panel to wake up the unit, then complete the procedure.

3.7 General Circuit Diagram

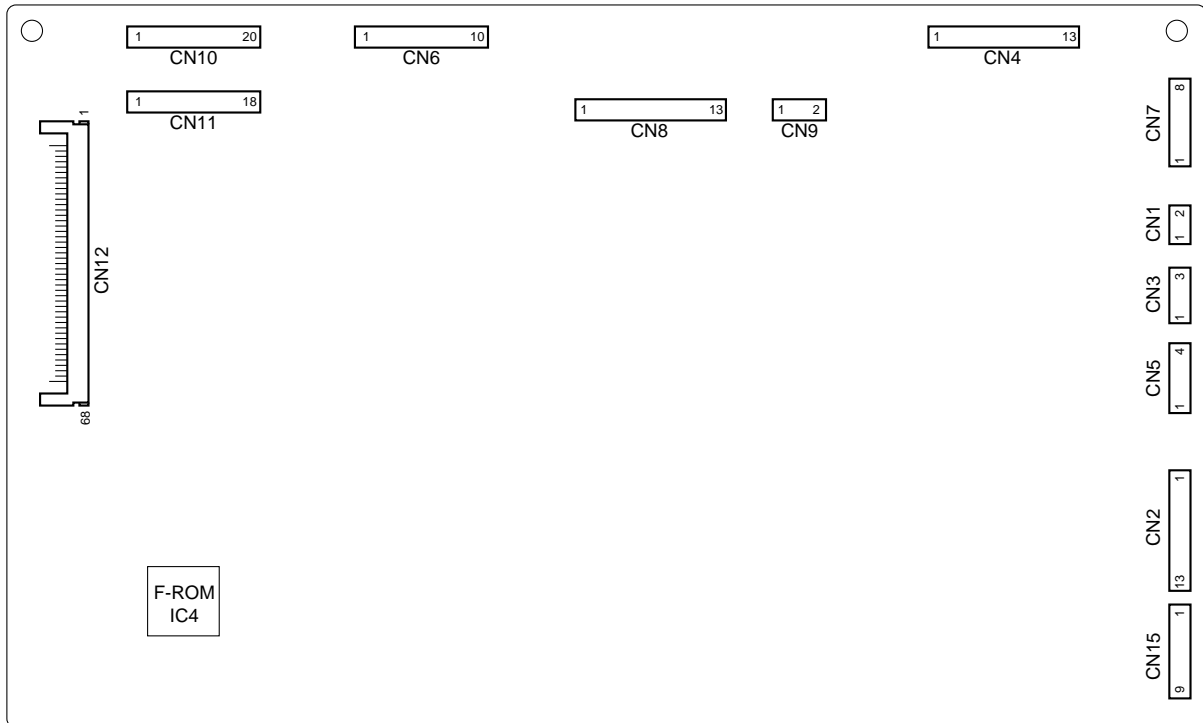
3.7.1 Fax Circuit



3.7.2 Printer Circuit



3.8 SCA / SCB PCB (UF-595, UF-585)

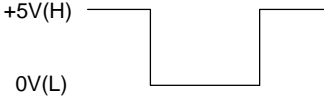
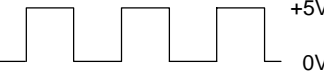
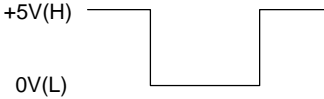
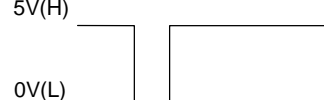

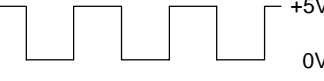
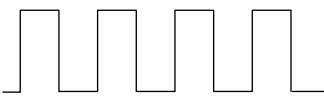
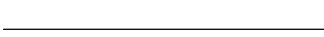
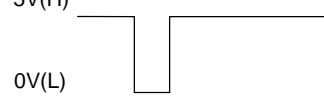


CN1


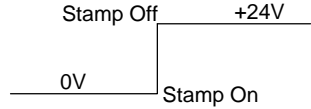
Pin No.	Signal Name	Destination	Signal Waveform	Function
CN1-1	+24V	LED Array		+24 VDC Power Supply
CN1-2	nLEDON	LED Array		LED Enable Signal

CN2






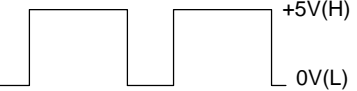
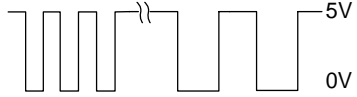
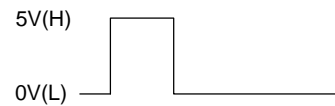
Pin No.	Signal Name	Destination	Signal Waveform	Function
CN2-1	nSTA	LPC PCB CN 50-1		Serial Interface Data Signal
CN2-2	nSCLK	LPC PCB CN 50-2		Serial Interface Synchronization Clock
CN2-3	nSYNC	LPC PCB CN 50-3		V - SYNC for Video Signal

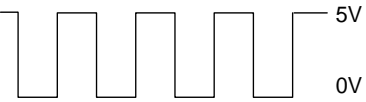
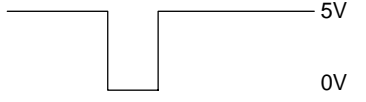
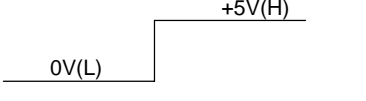
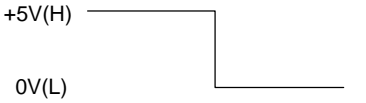
Pin No.	Signal Name	Destination	Signal Waveform	Function
CN2-4	nSBSY	LPC PCB CN 50-4		Serial Interface Enable Signal
CN2-5	nCMD	LPC PCB CN 50-5		Serial Interface Command Data Signal
CN2-6	nCBSY	LPC PCB CN 50-6		Serial Interface Enable Signal
CN2-7	nPRNT	LPC PCB CN 50-7		Print Request Signal
CN2-8	nPRDY	LPC PCB CN 50-8		Printer Ready Signal
CN2-9	nHSYNC	LPC PCB CN 50-9		H - SYNC for Video Signal
CN2-10	nRESET	LPC PCB CN 50-10		Not Used
CN2-11	nVDO	LPC PCB CN 50-11		Laser Drive Print Data Signal
CN2-12	GND	LPC PCB CN 50-12		Ground
CN2-13	nPRST	LPC PCB CN 50-13		Printer External Reset Signal

CN3

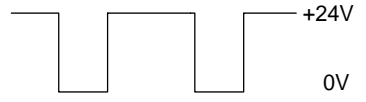
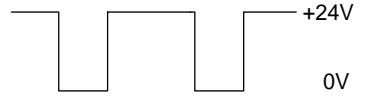
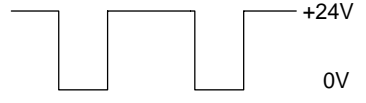
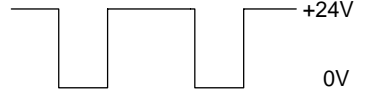
Pin No.	Signal Name	Destination	Signal Waveform	Function
CN3-1	+24V	Stamp Solenoid		+24 VDC Power Supply
CN3-2	NC			Not Used
CN3-3	nSTAMPON	Stamp Solenoid		Stamp Driver Signal

CN4



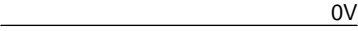
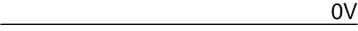




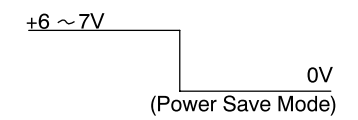
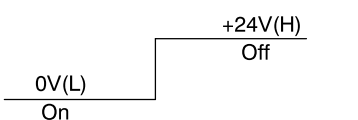
Pin No.	Signal Name	Destination	Signal Waveform	Function
CN4-1	BATLVL	PNL PCB CN40-1		Battery Backup Power Supply
CN4-2	+5V	PNL PCB CN40-2		+5 VDC Power Supply
CN4-3	+5VP	PNL PCB CN40-3		+5 VDC Power Supply
CN4-4	GND	PNL PCB CN40-4		Ground
CN4-5	GND	PNL PCB CN40-5		Ground
CN4-6	pPNLRD	PNL PCB CN40-6		Reception Data
CN4-7	pPNLTD	PNL PCB CN40-7		Transmission Data
CN4-8	pPNLCK	PNL PCB CN40-8		Serial Data Transfer Clock
CN4-9	pPNLRST	PNL PCB CN40-9		Panel Reset Signal (Reset by 5V)

Pin No.	Signal Name	Destination	Signal Waveform	Function
CN4-10	pBZCLK	PNL PCB CN40-10		Buzzer Clock
CN4-11	nWAKUP	PNL PCB CN40-11		Power Saver Reset Signal
CN4-12	nPWSAVE	PNL PCB CN40-12		Power Saver Enable
CN4-13	nBPNT	PNL PCB CN40-13		Read Point Sensor Signal

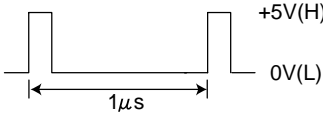
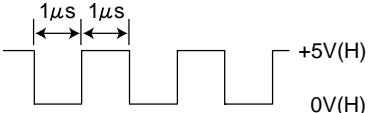
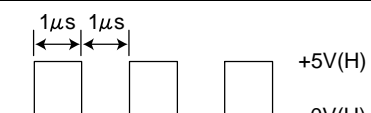
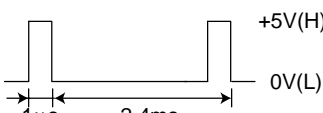



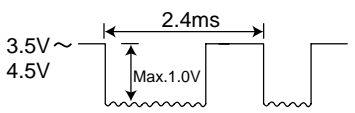
CN5

Pin No.	Signal Name	Destination	Signal Waveform	Function
CN5-1	MTpA	Transmit Motor		Stepping Signal
CN5-2	MTnA	Transmit Motor		Stepping Signal
CN5-3	MTpB	Transmit Motor		Stepping Signal
CN5-4	MTnB	Transmit Motor		Stepping Signal




CN6

Pin No.	Signal Name	Destination	Signal Waveform	Function
CN6-1	+24V	LVPS CN33-1		+24 VDC Power Supply
CN6-2	+24V	LVPS CN33-2		+24 VDC Power Supply
CN6-3	GND	LVPS CN33-3		Ground
CN6-4	GND	LVPS CN33-4		Ground
CN6-5	-12V	LVPS CN33-5		-12 VDC Power Supply
CN6-6	+5V	LVPS CN33-6		+5 VDC Power Supply
CN6-7	+5V	LVPS CN33-7		+5 VDC Power Supply
CN6-8	+5VP	LVPS CN33-8		+5 VDC Sleep Mode Power Supply
CN6-9	nMPON	LVPS CN33-9		Power Saver Mode Control Signal
CN6-10	nSSR	LVPS CN33-10		Fuser Lamp Control Signal

CN7



Pin No.	Signal Name	Destination	Signal Waveform	Function
CN7-1	FR	CCD PCB CN30-1		Reset Signal
CN7-2	FCK1	CCD PCB CN30-2		Shift Register Clock 1
CN7-3	FCK2	CCD PCB CN30-3		Shift Register Clock 2
CN7-4	FSG	CCD PCB CN30-4		Data Transfer Enable Signal
CN7-5	AGND	CCD PCB CN30-5		Ground
CN7-6	+5V	CCD PCB CN30-6		+5 VDC Power Supply
CN7-7	DOS	CCD PCB CN30-7		Differential Output Signal
CN7-8	OS	CCD PCB CN30-8		Output Signal

CN8

Pin No.	Signal Name	Destination	Signal Waveform	Function
CN8-1	+24V	LCU PCB CN25-1		+24 VDC Power Supply
CN8-2	pCTON	LCU PCB CN25-2		Ring Detection Signal H : Ring Detected L : Ring Not Detected
CN8-3	+5V	LCU PCB CN25-3		+5Vp

Pin No.	Signal Name	Destination	Signal Waveform	Function
CN8-4	pHKOF	LCU PCB CN25-4		External Phone Off-Hook Detection Signal (Phone Line must be connected) H : Off Hook L : On Hook
CN8-5	pPLSD	LCU PCB CN25-5		Pulse Dial Relay Drive Signal H : Make L : Break
CN8-6	pCMLD	LCU PCB CN25-6.		Line Switching Relay Drive Signal H : CML On L : CML Off
CN8-7	pTCKD	LCU PCB CN25-7		Not Used
CN8-8	pEAKD	LCU PCB CN25-8		Not Used
CN8-9	GND	LCU PCB CN25-9		Ground
CN8-10	HYBSR	LCU PCB CN25-10		Line Transformer Input Signal
CN8-11	AGND	LCU PCB CN25-11		Ground
CN8-12	HYSIG	LCU PCB CN25-12		FAX Off Line Signal
CN8-13	NC	LCU PCB CN25-13		Not Used



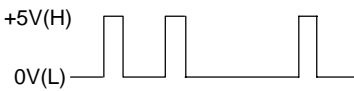
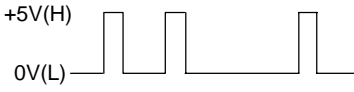
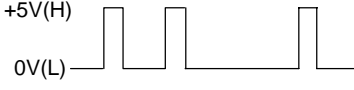
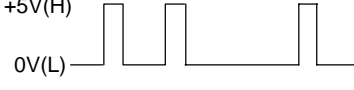
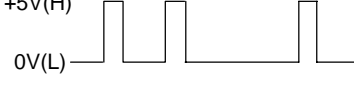

CN9

Pin No.	Signal Name	Destination	Signal Waveform	Function
CN9-1	pSPKOT	Speaker		Line Signal, Key Tone, Ringer
CN9-2	GND	Speaker		Ground

CN10

Note:


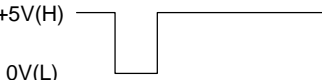
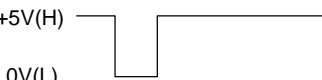


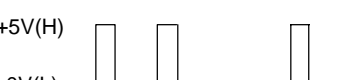
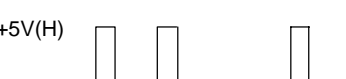
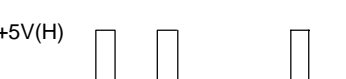
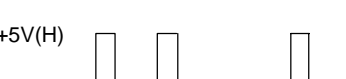
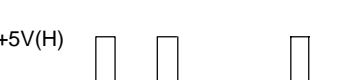
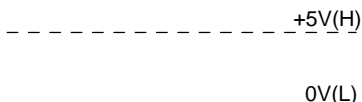
CN212 is available when the Optional Parallel I/F is installed.

Pin No.	Signal Name	Destination			Signal Waveform	Function
		PRTA	PRTA	PRT		
		CN200	CN202	CN212		
CN10-1	GND	20	30	30		Ground
CN10-2	GND	19	10	10		Ground
CN10-3	D15	18	29	29		Data Signal (15)
CN10-4	D14	17	9	9		Data Signal (14)
CN10-5	D13	16	28	28		Data Signal (13)
CN10-6	D12	15	8	8		Data Signal (12)
CN10-7	D11	14	27	27		Data Signal (11)
CN10-8	D10	13	7	7		Data Signal (10)

Pin No.	Signal Name	Destination			Signal Waveform	Function
		PRTA	PRTA	PRT		
		CN200	CN202	CN212		
CN10-9	D9	12	26	26		Data Signal (9)
CN10-10	D8	11	6	6		Data Signal (8)
CN10-11	D7	10	25	25		Data Signal (7)
CN10-12	D6	9	5	5		Data Signal (6)
CN10-13	D5	8	24	24		Data Signal (5)
CN10-14	D4	7	4	4		Data Signal (4)
CN10-15	D3	6	23	23		Data Signal (3)
CN10-16	D2	5	3	3		Data Signal (2)
CN10-17	D1	4	22	22		Data Signal (1)
CN10-18	D0	3	2	2		Data Signal (0)
CN10-19	+5V	2	21	21		+5 VDC Power Supply
CN10-20	+5V	1	1	1		+5 VDC Power Supply

CN11**Note:**

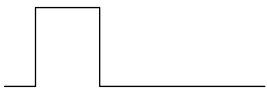
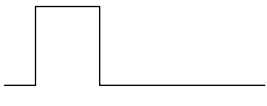
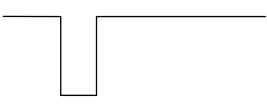

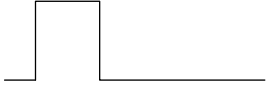
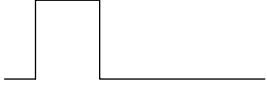

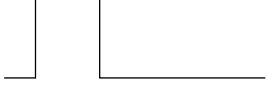

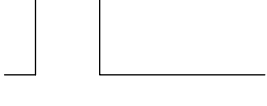
CN212 is available when the Optional Parallel I/F is installed.

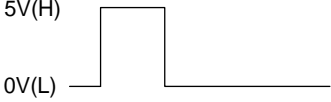
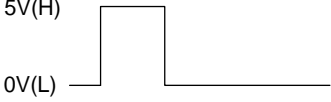
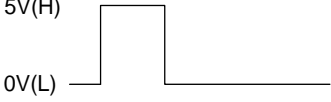
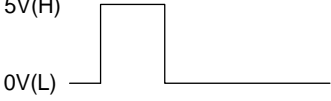
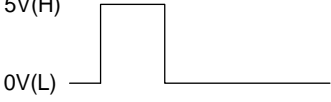
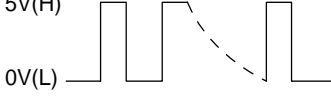
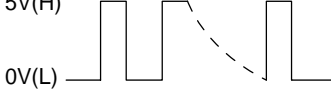
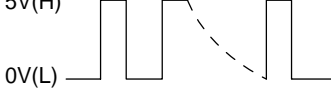
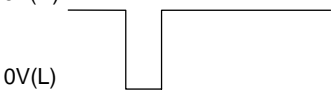


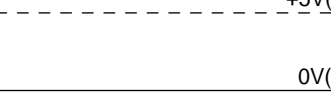
Pin No.	Signal Name	Destination			Signal Waveform	Function
		PRTA	PRTA	PRT		
		CN201	CN202	CN212		
CN11-1	GND	18	40	40		Ground
CN11-2	nWRH	17	20	20		Write H Signal - Low Enable
CN11-3	nWRL	16	39	39		Write L Signal - Low Enable
CN11-4	nRD	15	19	19		Read Signal - Low Enable
CN11-5	nCS	14	38	38		FPGA (Field Programmed Gate Array) Chip Select - Low Enable
CN11-6	A5	13	18	18		Address Signal (5)
CN11-7	A4	12	37	37		Address Signal (4)
CN11-8	A3	11	17	17		Address Signal (3)
CN11-9	A2	10	36	36		Address Signal (2)
CN11-10	A1	9	16	16		Address Signal (1)
CN11-11	nBCNOPT	8	35	35		Detection Signal H : Option Board Not Installed L : Option Board Installed

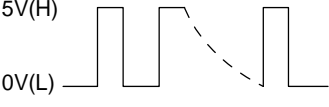
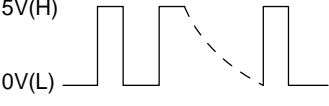
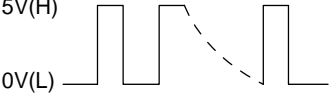
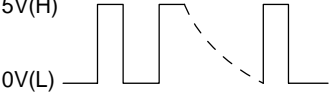
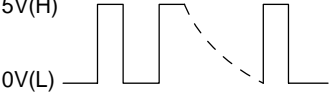
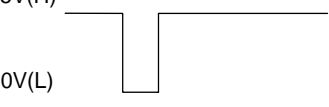
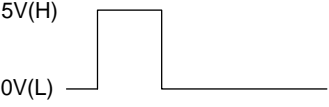
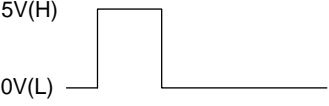
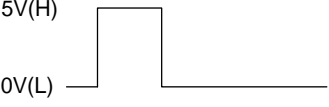
Pin No.	Signal Name	Destination			Signal Waveform	Function
		PRTA	PRTA	PRT		
		CN201	CN202	CN212		
CN11-12	nINT1	7	15	15		Data Transfer Interrupt Signal
CN11-13	nINT0	6	34	34		Signal Detect Interrupt Signal
CN11-14	pDRACK	5	14	14		Not Used
CN11-15	nDREQ	4	33	33		Not Used
CN11-16	pDACK	3	13	13		Not Used
CN11-17	nRST	2	32	32		FPGA (Field Programmed Gate Array) Reset Signal
CN11-18	GND	1	11	11		Ground

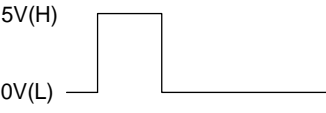


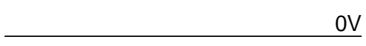
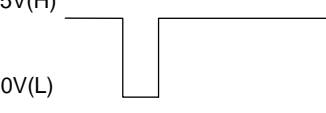
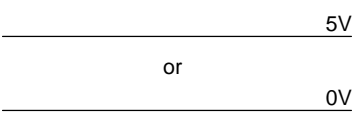
CN12

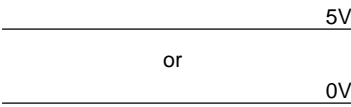
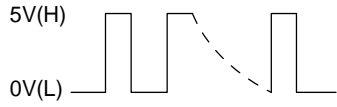
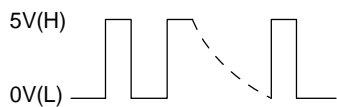
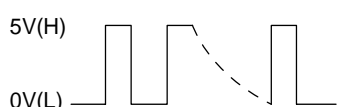
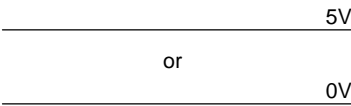
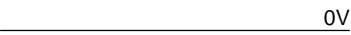
Pin No.	Signal Name	Destination	Signal Waveform	Function
CN12-1	GND	Flash Memory Card	 0V	Ground
CN12-2	D3	Flash Memory Card		Data Signal (3)
CN12-3	D4	Flash Memory Card		Data Signal (4)
CN12-4	D5	Flash Memory Card		Data Signal (5)
CN12-5	D6	Flash Memory Card		Data Signal (6)
CN12-6	D7	Flash Memory Card		Data Signal (7)
CN12-7	+5V(*CE1)	Flash Memory Card	 +5V	+5 VDC Power Supply
CN12-8	A11	Flash Memory Card		Address Signal (11)
CN12-9	nRD	Flash Memory Card		Read Signal - Low Enable
CN12-10	A12	Flash Memory Card		Address Signal (12)
CN12-11	A10	Flash Memory Card		Address Signal (10)
CN12-12	A9	Flash Memory Card		Address Signal (9)

Pin No.	Signal Name	Destination	Signal Waveform	Function
CN12-13	A14	Flash Memory Card	5V(H)  0V(L)	Address Signal (14)
CN12-14	A15	Flash Memory Card	5V(H)  0V(L)	Address Signal (15)
CN12-15	nWRL	Flash Memory Card	5V(H)  0V(L)	Write L Signal - Low Enable
CN12-16	RDY / *BSY	Flash Memory Card		Not Used
CN12-17	+5V	Flash Memory Card		+5 VDC Power Supply
CN12-18	NC	Flash Memory Card		Not Used
CN12-19	A17	Flash Memory Card	5V(H)  0V(L)	Address Signal (17)
CN12-20	A16	Flash Memory Card	5V(H)  0V(L)	Address Signal (16)
CN12-21	A13	Flash Memory Card	5V(H)  0V(L)	Address Signal (13)
CN12-22	A8	Flash Memory Card	5V(H)  0V(L)	Address Signal (8)
CN12-23	A7	Flash Memory Card	5V(H)  0V(L)	Address Signal (7)
CN12-24	A6	Flash Memory Card	5V(H)  0V(L)	Address Signal (6)




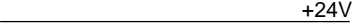


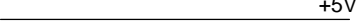
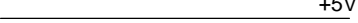
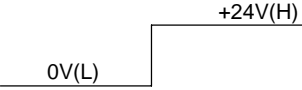
Pin No.	Signal Name	Destination	Signal Waveform	Function
CN12-25	A5	Flash Memory Card		Address Signal (5)
CN12-26	A4	Flash Memory Card		Address Signal (4)
CN12-27	A3	Flash Memory Card		Address Signal (3)
CN12-28	A2	Flash Memory Card		Address Signal (2)
CN12-29	A1	Flash Memory Card		Address Signal (1)
CN12-30	D0	Flash Memory Card		Data Signal (0)
CN12-31	D1	Flash Memory Card		Data Signal (1)
CN12-32	D2	Flash Memory Card		Data Signal (2)
CN12-33	nWRH	Flash Memory Card		Write H Signal - Low Enable
CN12-34	GND	Flash Memory Card		Ground
CN12-35	GND	Flash Memory Card		Ground
CN12-36	nCD	Flash Memory Card		Flash Memory Card Detection Signal H : Card Not Installed L : Card Installed

Pin No.	Signal Name	Destination	Signal Waveform	Function
CN12-37	D11	Flash Memory Card		Data Signal (11)
CN12-38	D12	Flash Memory Card		Data Signal (12)
CN12-39	D13	Flash Memory Card		Data Signal (13)
CN12-40	D14	Flash Memory Card		Data Signal (14)
CN12-41	D15	Flash Memory Card		Data Signal (15)
CN12-42	nCE2	Flash Memory Card		Low Enable
CN12-43	NC			Not Used
CN12-44	RSV	Flash Memory Card		Not Used
CN12-45	RSV	Flash Memory Card		Not Used
CN12-46	A18	Flash Memory Card		Address Signal (18)
CN12-47	A19	Flash Memory Card		Address Signal (19)
CN12-48	A20	Flash Memory Card		Address Signal (20)

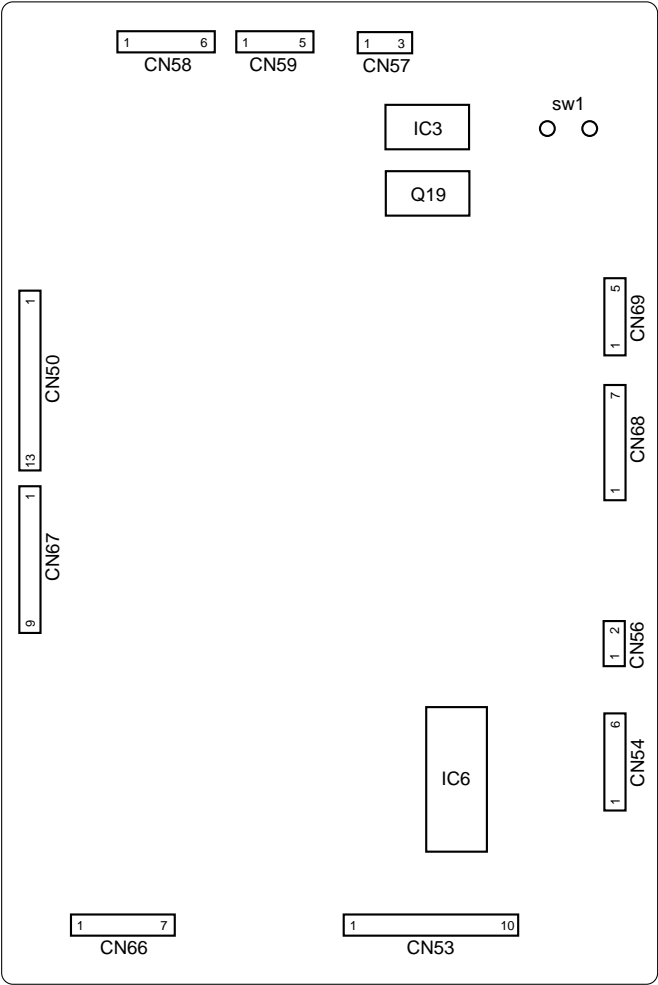
Pin No.	Signal Name	Destination	Signal Waveform	Function
CN12-49	A21	Flash Memory Card		Address Signal (21)
CN12-50	GND	Flash Memory Card		Ground
CN12-51	+5V	Flash Memory Card		+5 VDC Power Supply
CN12-52	NC	Flash Memory Card		Not Used
CN12-53	GND(A22)	Flash Memory Card		Ground
CN12-54-56	NC	Flash Memory Card		Not Used
CN12-57	RFU	Flash Memory Card		Not Used
CN12-58	NC	Flash Memory Card		Low Enable
CN12-59	nMB4	Flash Memory Card		Not Used
CN12-60	RFU	Flash Memory Card		Not Used
CN12-61	NC	Flash Memory Card		Not Used
CN12-62	ID2	Flash Memory Card		Flash Memory Card ID

Pin No.	Signal Name	Destination	Signal Waveform	Function
CN12-63	ID1	Flash Memory Card		Flash Memory Card ID
CN12-64	D8	Flash Memory Card		Data Signal (8)
CN12-65	D9	Flash Memory Card		Data Signal (9)
CN12-66	D10	Flash Memory Card		Data Signal (10)
CN12-67	ID0	Flash Memory Card		Flash Memory Card ID
CN12-68	GND	Flash Memory Card		Ground

CN15

Pin No.	Signal Name	Destination	Signal Waveform	Function
CN15-1	+24V	LPC PCB CN15-1		+24 VDC Power Supply
CN15-2	+24V	LPC PCB CN15-2		+24 VDC Power Supply
CN15-3	+24V	LPC PCB CN15-3		+24 VDC Power Supply
CN15-4	+24V	LPC PCB CN15-4		+24 VDC Power Supply
CN15-5	GND	LPC PCB CN15-5		Ground
CN15-6	GND	LPC PCB CN15-6		Ground
CN15-7	+5V	LPC PCB CN15-7		+5 VDC Power Supply
CN15-8	+5V	LPC PCB CN15-8		+5 VDC Power Supply
CN15-9	nSSR	LPC PCB CN15-9		Fuser Lamp Control Signal

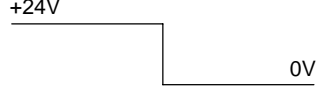

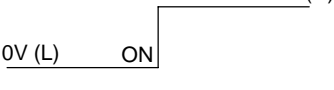

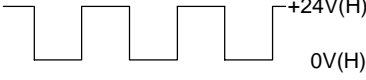


3.9 LPC PCB



CN50

Refer to SCA / SCB PCB CN2.

CN53

Pin No.	Signal Name	Destination	Signal Waveform	Function
CN53-1	+24VM	HVPS CN39-1		+24 VDC Power Supply
CN53-2	nCR0	HVPS CN39-2		Charge Control AC Output
CN53-3	nCR1	HVPS CN39-3		Charge Control DC Output
CN53-4	nDR0	HVPS CN39-4		Development Control AC+DC Output
CN53-5	nDRCK0	HVPS CN39-5		Development AC Clock (F = 1.875 kHz)
CN53-6	nDRCK1	HVPS CN39-6		Not Used
CN53-7	nCDDC	HVPS CN39-7		Not Used
CN53-8	nTR0	HVPS CN39-8		Transfer Control Transfer Output
CN53-9	nTR1	HVPS CN39-9		Not Used
CN53-10	MGND	HVPS CN39-10		Ground

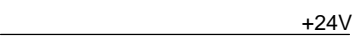
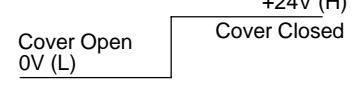
CN54

Pin No.	Signal Name	Destination	Signal Waveform	Function
CN54-1	nMMP0a	Printer Motor CN118-1		Printer Motor Phase 1 Output Signal
CN54-2	+24VM	Printer Motor CN118-2		+24 VDC Power Supply
CN54-3	pMMP0a	Printer Motor CN118-3		Printer Motor Phase 0 Output Signal
CN54-4	nMMP2a	Printer Motor CN118-4		Printer Motor Phase 3 Output Signal
CN54-5	+24VM	Printer Motor CN118-5		+24 VDC Power Supply
CN54-6	pMMP2a	Printer Motor CN118-6		Printer Motor Phase 2 Output Signal


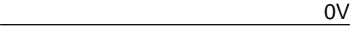
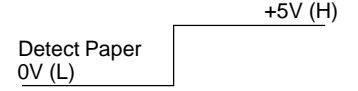

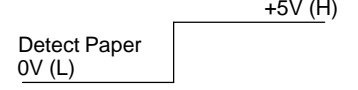
CN56

Pin No.	Signal Name	Destination	Signal Waveform	Function
CN56-1	+24VM	Paper Feed Solenoid		+24 VDC Power Supply
CN56-2	nADF1	Paper Feed Solenoid		Paper Feed Roller Solenoid Control Signal

CN57

Pin No.	Signal Name	Destination	Signal Waveform	Function
CN57-1	+24V	ILS PCB CN73-1	 +24V	+24 VDC Power Supply
CN57-2	NC			
CN57-3	+24VD	ILS PCB CN73-3	 +24V (H) Cover Closed Cover Open 0V (L)	Printer Cover Detection Signal

CN58

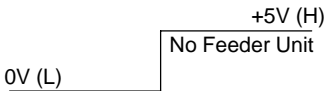
Pin No.	Signal Name	Destination	Signal Waveform	Function
CN58-1	nCCHK1	SNS4 CN87-1	 +5V (H) No Cassette 0V (L)	No Cassette Detection Signal
CN58-2	GND	SNS4 CN87-2	 0V	Ground
CN58-3	nRSEN	SNS4 CN87-3	 +5V (H) Detect Paper 0V (L)	Timing Sensor Detection Signal
CN58-4	THERM	SNS4 CN87-4	Approx. +2 VDC	Fuser Thermistor Voltage Level Signal
CN58-5	+5V	SNS4 CN87-5	 +5V	+5 VDC Power Supply
CN58-6	nESEN	SNS4 CN87-6	 +5V (H) Detect Paper 0V (L)	Paper Exit Sensor Detection Signal

CN59

Pin No.	Signal Name	Destination	Signal Waveform	Function
CN59-1	nPCHK1	SNS1 CN83-1	<p>Paper 0V (L) +5V (H) No Paper</p>	No Paper Sensor Detection Signal
CN59-2	LDSP1	SNS1 CN83-2	Approx. +1 VDC	No Paper Sensor LED Drive Current
CN59-3	GND	SNS1 CN83-3	<p>0V</p>	Ground
CN59-4	TONER	SNS1 CN83-4	Approx. +2 VDC	Remaining Toner Level Signal
CN59-5	+5V	SNS1 CN83-5	<p>+5V</p>	+5 VDC Power Supply

CN66

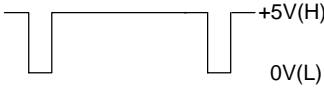
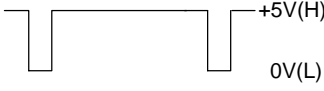

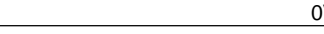
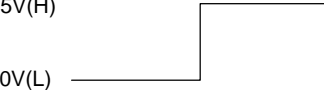


Pin No.	Signal Name	Destination	Signal Waveform	Function
CN66-1	+24VM	CST2 CN70-1	<p>+24V 0V</p>	+24 VDC Power Supply
CN66-2	GND	CST2 CN70-2	<p>0V</p>	Ground
CN66-3	+5V	CST2 CN70-3	<p>+5V</p>	+5 VDC Power Supply
CN66-4	nPCHK2	CST2 CN70-4	<p>Paper 0V (L) +5V (H) No Paper</p>	No Paper Detection Signal (2nd Cassette)
CN66-5	pADF2	CST2 CN70-5	<p>+5V (H) ON 0V (L)</p>	Feed Roller Drive Clutch Control Signal (2nd Cassette)
CN66-6	nCCHK2	CST2 CN70-6	<p>No Cassette 0V (L) +5V (H)</p>	No Cassette Detection Signal (2nd Cassette)

Pin No.	Signal Name	Destination	Signal Waveform	Function
CN66-7	nOP	CST2 CN70-7		2nd Feeder Unit Detection Signal

CN67

Refer to SCA / SCB CN15.

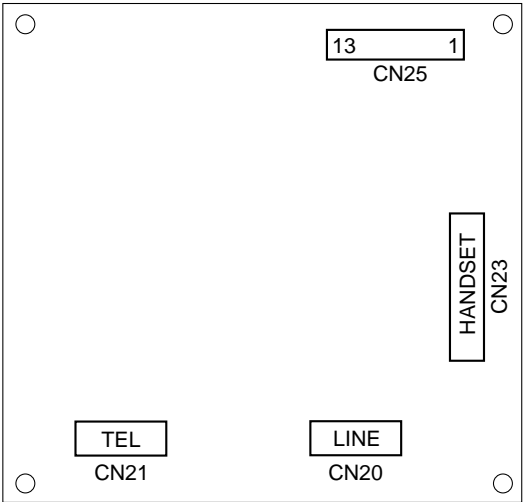
CN68

Pin No.	Signal Name	Destination	Signal Waveform	Function
CN68-1	S-H	LSU CN1-1		Laser Power Sample/Hold Timing Signal L : Sampling H : Holding
CN68-2	nHSYNC	LSU CN1-2		H-SYNC Video Signal 2.136 ms (400 dpi) 1.393 ms (600 dpi)
CN68-3	L+5V	LSU CN1-3		+5 VDC Power Supply for Laser Drive Circuit (Supplied only while the LP is operating)
CN68-4	GND	LSU CN1-4		Ground
CN68-5	nLDON	LSU CN1-5		Laser Control Signal
CN68-6	nVIDEO	LSU CN1-6		Video Data L=Black, H=White
CN68-7	GND	LSU CN1-7		Ground

CN69

Pin No.	Signal Name	Destination	Signal Waveform	Function
CN69-1	nPMCK	LSU CN15-1	+5V(H) 0V(H)	Tetragon Motor Clock 0.702 kHz (400 dpi) 1.076 kHz (600 dpi)
CN69-2	nPMRY	LSU CN15-2	+5V (H) Not Ready Ready 0V (L)	Tetragon Motor Ready Signal
CN69-3	nPMON	LSU CN15-3	+5V (H) OFF ON 0V (L)	Tetragon Motor Control Signal
CN69-4	MGND	LSU CN15-4	0V	Frame Ground
CN69-5	+24VM	LSU CN15-5	+24V 0V	+24 VDC Power Supply

3.10 LCU PCB



CN20

Pin No.	Signal Name	Destination	Signal Waveform	Function
CN20-3	LT2(T)	Telephone Line		Line Signal
CN20-4	LT1(R)	Telephone Line		Line Signal

CN21

Pin No.	Signal Name	Destination	Signal Waveform	Function
CN21-3	T1	External Telephone		External Telephone Line Signal
CN21-4	T2	External Telephone		External Telephone Line Signal

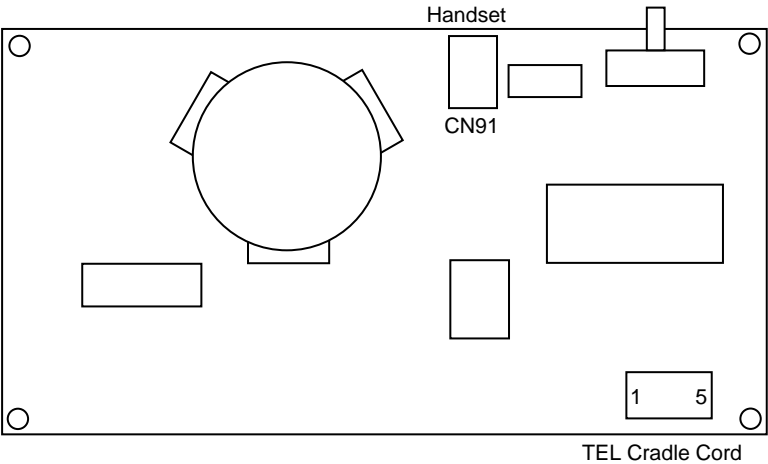
CN23

Pin No.	Signal Name	Destination	Signal Waveform	Function
CN23-1	NC			Not Used
CN23-2	NC			Not Used
CN23-3	HLIN1	SRU PCB CN90-1		Fax Handset Line Signal
CN23-4	HLIN2	SRU PCB CN90-2		Fax Handset Line Signal
CN23-5	NC			Not Used

CN25

Refer to SCA / SCB PCB CN8.

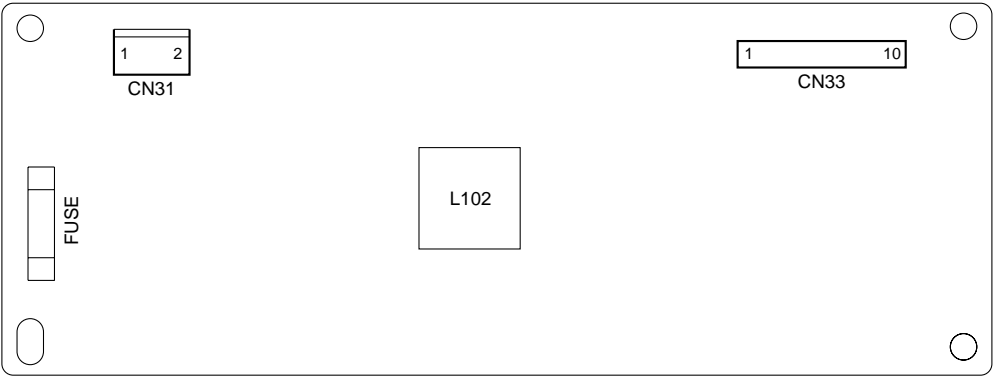
3.11 SRU PCB (Optional)



CN90
Refer to LCU PCB CN23.
CN91

Pin No.	Signal Name	Destination	Signal Waveform	Function
CN91-1	NC			Not Used
CN91-2	MIC (+)	Telephone Handset CN		Handset Microphone
CN91-3	RCV (+)	Telephone Handset CN		Handset Receiver
CN91-4	RCV (-)	Telephone Handset CN		Handset Receiver
CN91-5	MIC (-)	Telephone Handset CN		Handset Microphone
CN91-6	TGND		<div><div></div><div>0V</div></div>	Ground

3.12 Low Voltage Power Supply PCB (POW)



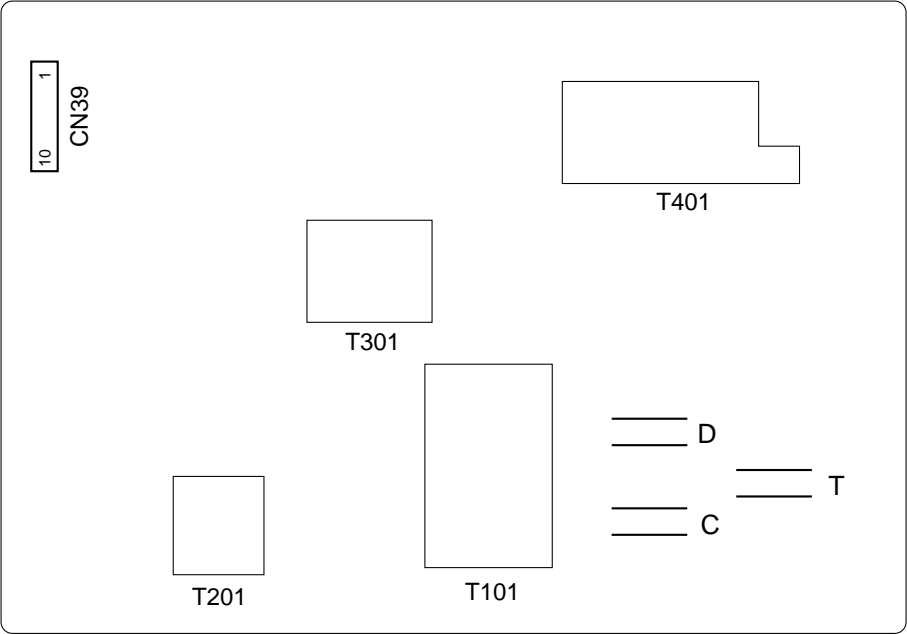
CN31

Pin No.	Signal Name	Destination	Signal Waveform	Function
CN31-1	HEAT 1	Fuser Unit CN116		Fuser Lamp AC (Black-Live)
CN31-2	HEAT 2	Fuser Unit CN116		Fuser Lamp AC (White-Neutral)

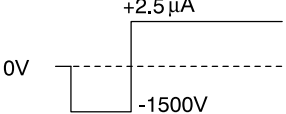
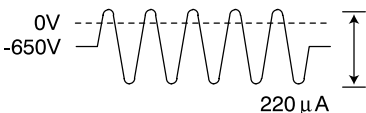
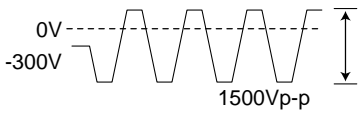
CN33

Refer to SCA / SCB PCB CN6.

3.13 High Voltage Power Supply PCB (HVPS)

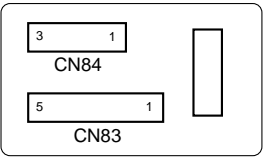


High Voltage Output


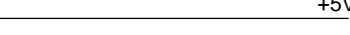
Pin No.	Signal Name	Destination	Signal Waveform	Function
T	Transfer	Bias Transfer Roller		(1) Transfer Current: (+2.5 µA) (2) Cleaning Voltage: (-1500 V)
C	Charge	Bias Charge Roller		Charge Current: 220 µA (AC 220 Hz Sine Wave) & DC Charge Voltage
D	Development	Development Roller		Development Voltage (AC 1.875 kHz Square Wave) & DC Voltage

CN39
Refer to LPC PCB CN53.

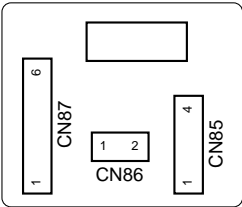
3.14 SNS3



CN83
Refer to LPC PCB CN59.
CN84

Pin No.	Signal Name	Destination	Signal Waveform	Function
CN84-1	GND	Toner Sensor	 0V	Ground
CN84-2	TONER	Toner Sensor	Approx. +2 VDC	Remaining Toner Level Signal
CN84-3	+5V	Toner Sensor	 +5V	+5 VDC Power Supply

3.15 SNS4



CN85

Pin No.	Signal Name	Destination	Signal Waveform	Function
CN85-1	nCCHK1	SNS1 CN81-1	 No Cassette 0V (L) +5V (H)	No Cassette Detection Signal
CN85-2	GND	SNS1 CN81-2	 0V	Ground
CN85-3	nRSEN	SNS1 CN81-3	 Detect Paper 0V (L) +5V (H)	Timing Sensor Detection Signal
CN85-4	LDRE	SNS1 CN81-4	Approx. +2 VDC	Timing Sensor and No Cassette Sensor LED Drive Current

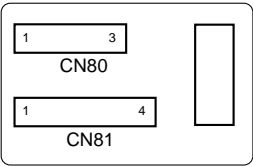
CN86

Pin No.	Signal Name	Destination	Signal Waveform	Function
CN86-1	+5V	Thermistor	 +5V	+5 VDC Power Supply
CN86-2	THERM	Thermistor	Approx. +2 VDC	Fuser Thermistor Voltage Level Signal

CN87

Refer to LPC PCB CN58.

3.16 SNS1



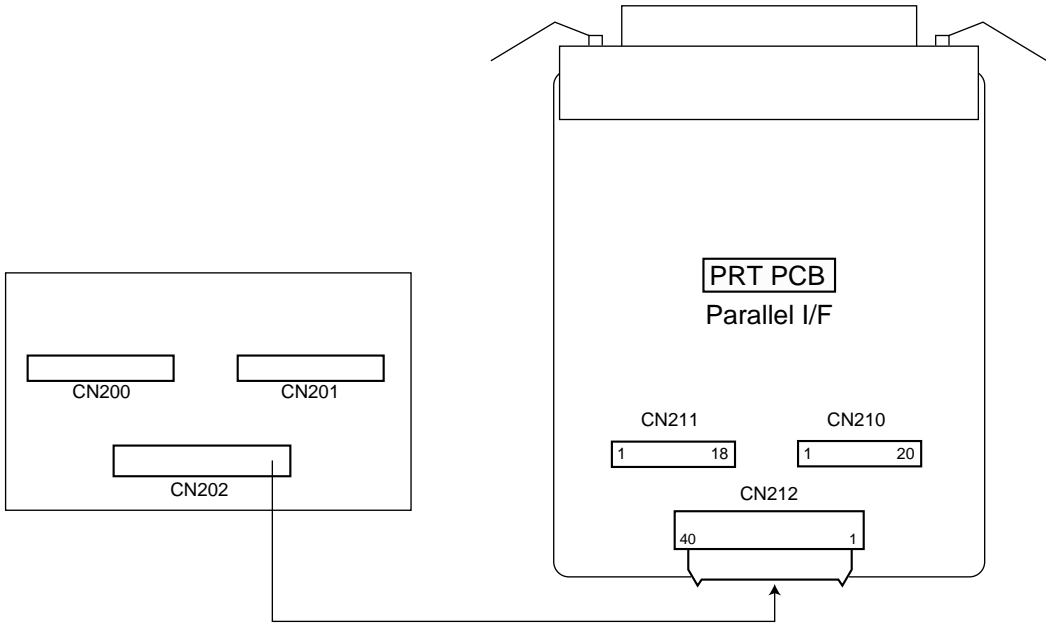
CN80

Pin No.	Signal Name	Destination	Signal Waveform	Function
CN80-1	nCCHK1	SNS2 CN82-1	 +5V (H) No Cassette 0V (L)	No Cassette Detection Signal
CN80-2	GND	SNS2 CN82-2	 0V	Ground
CN80-3	LDSC1	SNS2 CN82-3	Approx. +1 VDC	No Cassette Sensor LED Drive Current

CN81

Refer to SNS4 PCB CN85.

3.17 Parallel Interface PCB (Option)



CN200

Refer to SCA / SCB PCB CN10.

CN201

Refer to SCA / SCB PCB CN11.

CN202 and CN212

Refer to SCA / SCB PCB CN10 and CN11.

3.18 CCD Alignment

The **CCD PC Board** (337) is factory adjusted using special precision equipment and normally should not be replaced in the field. It is recommended that the entire **Scanner Block** (321) be replaced. This will insure that the **CCD PC Board** (337) is aligned properly.

If the **CCD PC Board** (337) is replaced, it can temporarily be aligned by following the procedure given below.

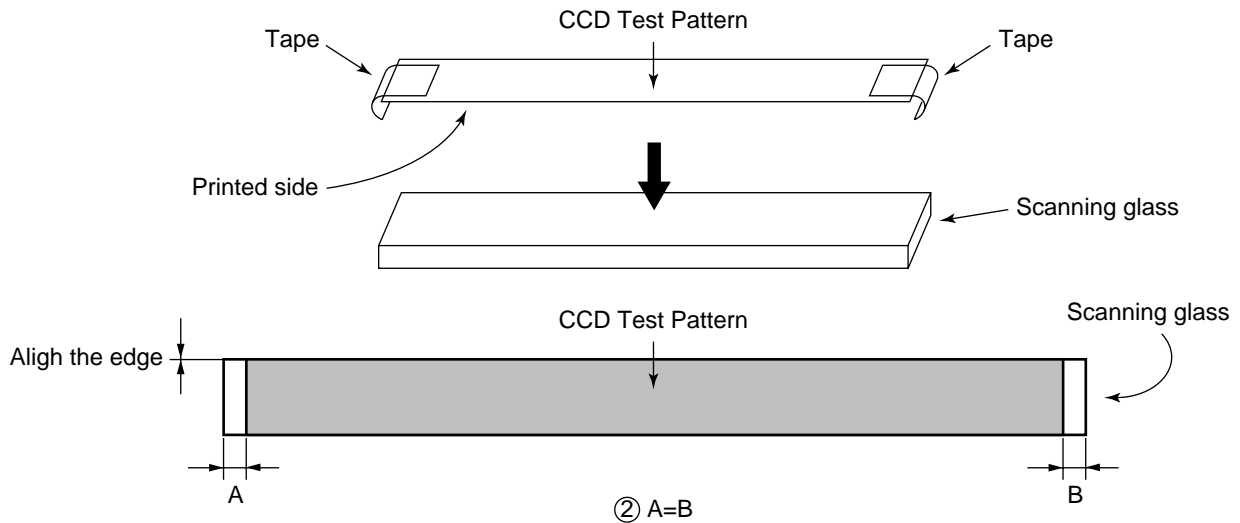
Note: The picture quality may not be the same as a unit that has been factory set.

• **TOOLS REQUIRED**

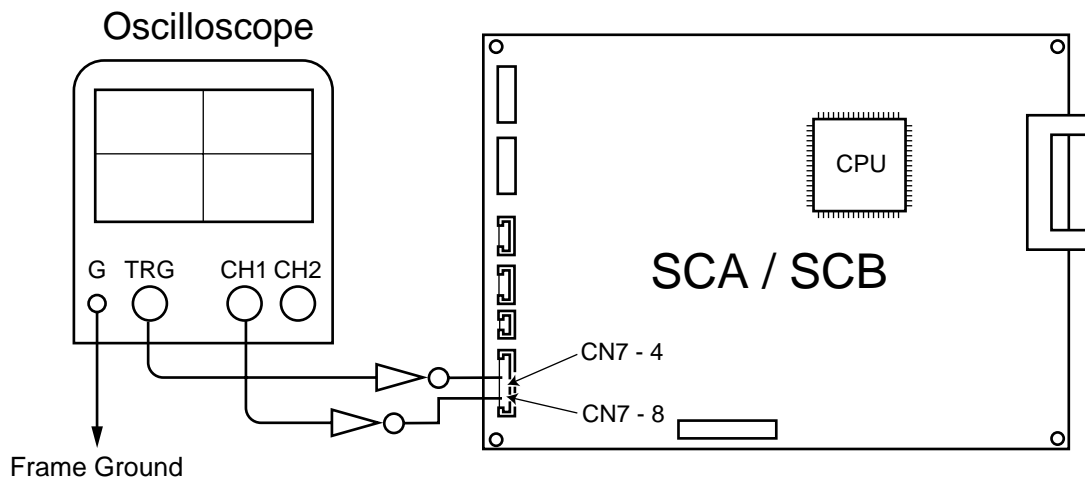
1. A 2 channel Oscilloscope
2. CCD Test Pattern
 - a copy can be made from the pattern shown in the Appendix. It must be reproduced to the same size as the sample pattern in the Appendix (1:1 ratio).

• **PROCEDURE**

1. Remove Covers (see chapter 2).
2. Remove the Transmitter Unit with the Control Panel Assembly (see Section 2.4).
3. Position the CCD Test Pattern as follows.
 - a. Remove the **Scanning Glass** (308).
 - b. Using scotch tape, position the CCD Test Pattern on the **Scanning Glass** (308) as shown below. The CCD Test Pattern must be faced down and centered on the **Scanning Glass** (308).
 - c. Set the **Scanning Glass** (308) with the CCD Test Pattern.



4. Connecting the Oscilloscope
 - Carefully solder 2 probe wires to the components shown below on the SCA / SCB PC Board as shown below.
 - a. CN7 pin 4 (Trigger)
 - b. CN7 pin 8 (CCD out)



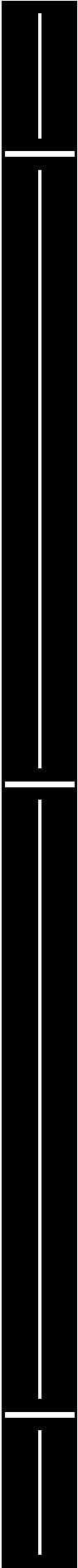
5. Adjusting the CCD PC Board

- a. Enter Service Mode No. 5-1 (see Section 5.5.1 [CCD Test]).
- b. Monitoring the Oscilloscope, carefully adjust the position of the CCD Board until the output is obtained as shown below. Make sure that the ADF Door is closed.
- c. Carefully tighten both mounting screws on the CCD PC Board.



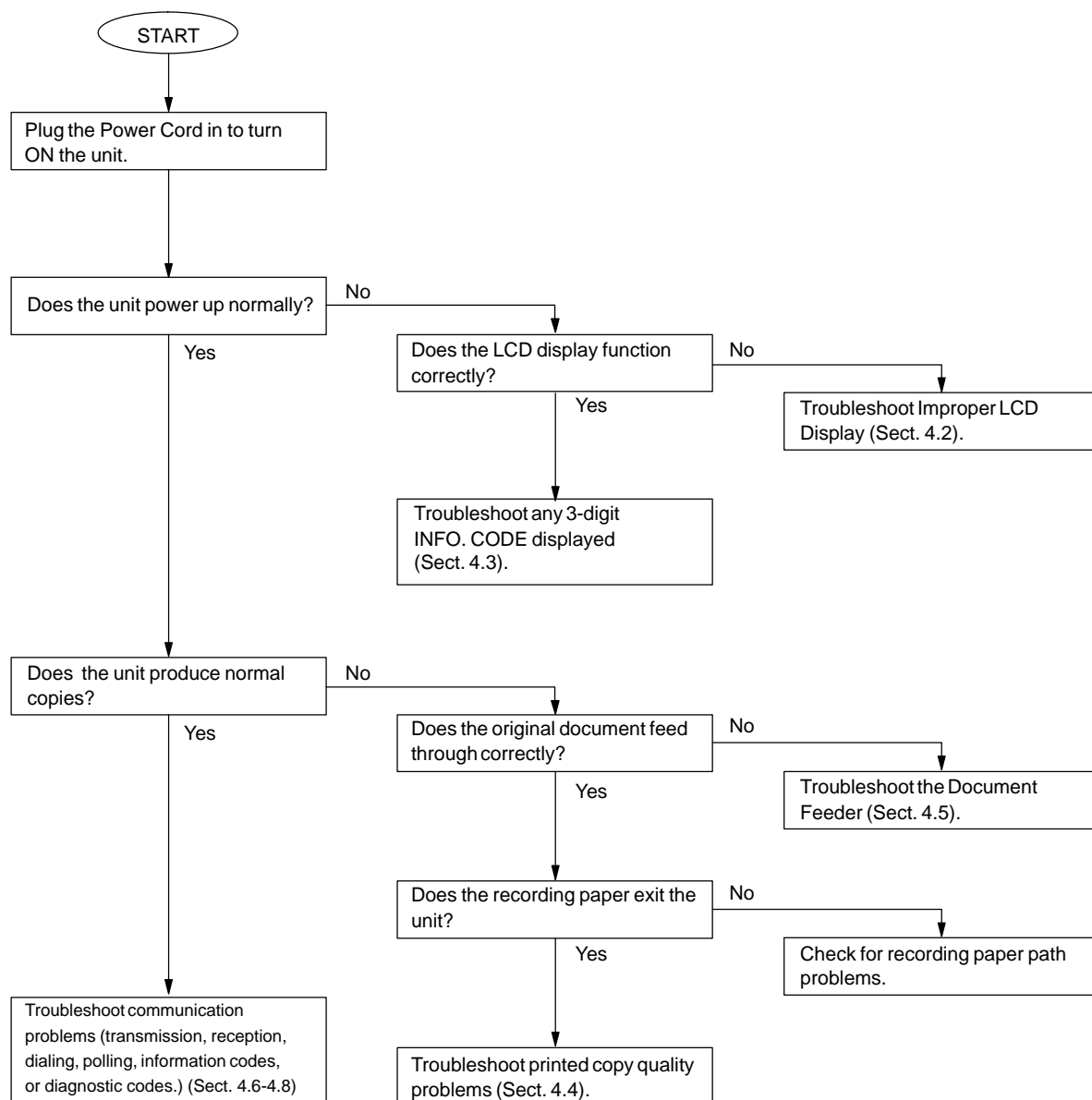
6. Disconnect the Oscilloscope and reassemble the machine.
7. Run a test in Copy Mode to ensure the until is working properly.

APPENDIX
CCD TEST PATTERN

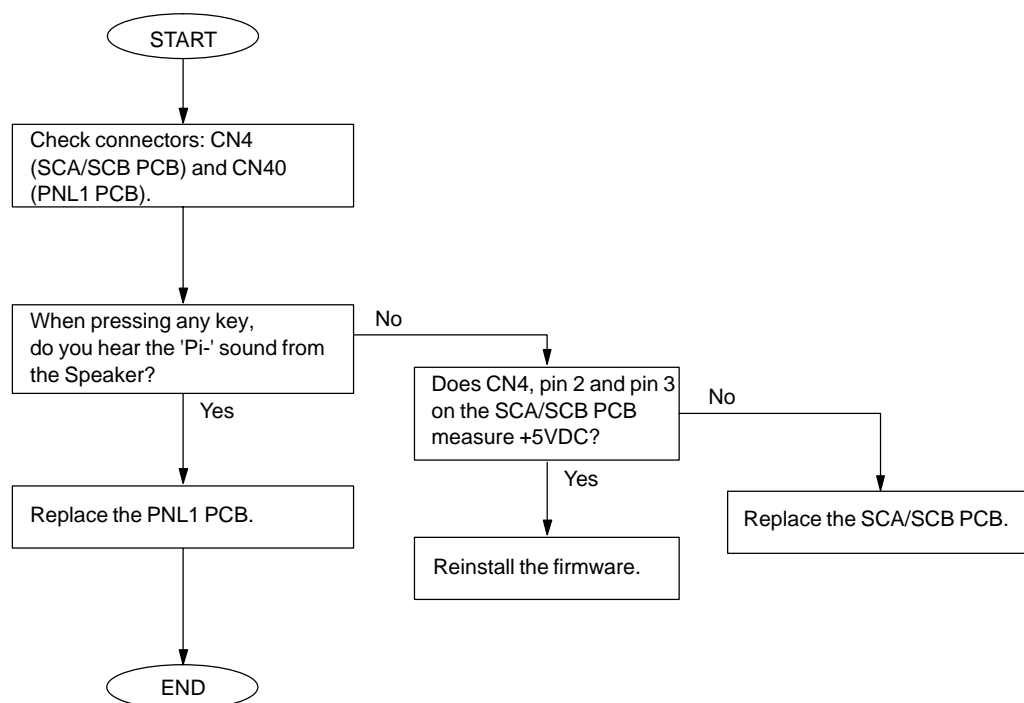


4 Troubleshooting

4.1 Initial Troubleshooting Flowchart



4.2 Improper LCD Display

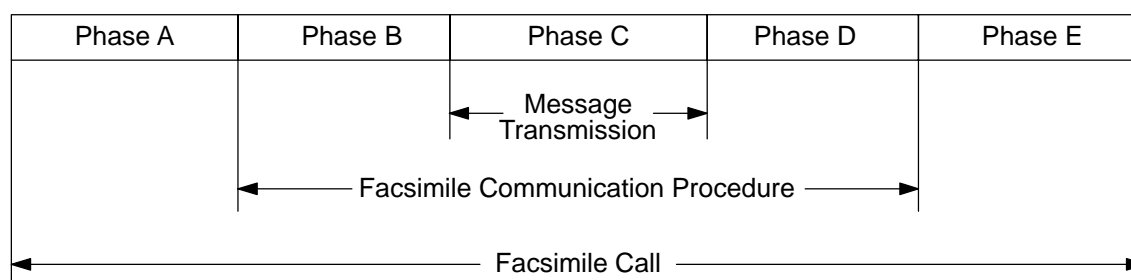


4.3 Information Codes (INFO. CODES)

The 3-digit information codes display to show the unit's status. These codes also print on the journal. The following table indicates appropriate sections for troubleshooting.

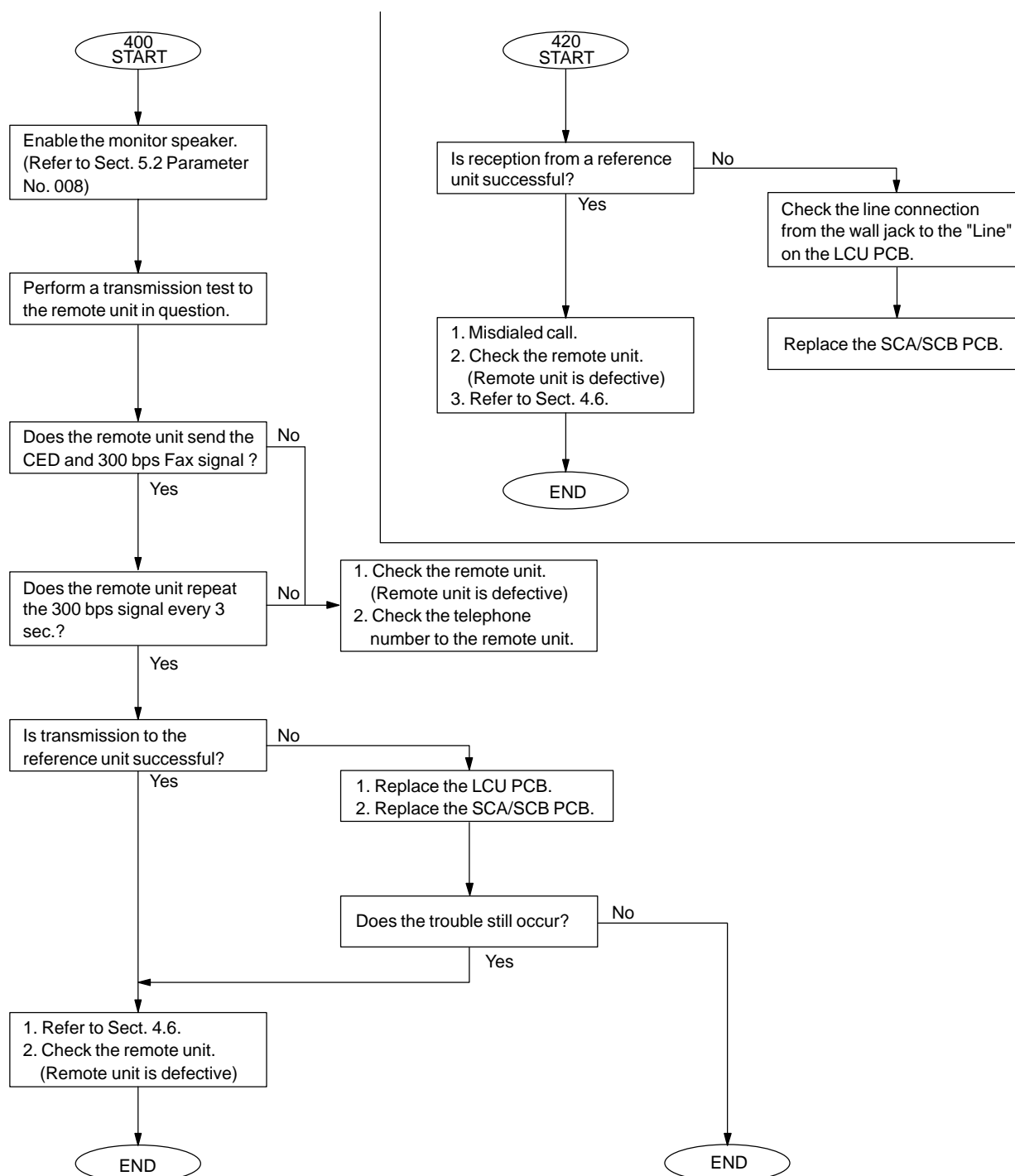
Code	Explanation	Phase	Section
001	Recording paper jam	C	4.3.8
002	Recording paper jam	C,D	4.3.8
007	Recording paper jam	C,D	4.3.8
010	No recording paper	B,C	4.3.9
030	Document misfeeding	B	4.3.10
031	Document too long	C	4.3.10
400	Transmission error	B	4.3.1
401	Transmission error	B	4.3.2
402	Transmission error	B	4.3.2
403	Polling reception error	B	4.3.12
404	Transmission error	B	4.3.3
405	Transmission error	B	4.3.3
407	Transmission error	D	4.3.3
408	Transmission error	D	4.3.5
409	Transmission error	D	4.3.5
411	Polling reception error	B	4.3.12
414	Polling reception error	B	4.3.12
415	Remote side mis-operation	B	4.3.12
416	Reception error	D	4.3.4
417	Reception error	C	4.3.5
418	Reception error	C	4.3.5
420	Reception error	B	4.3.1
422	Transmission error	B	4.3.2
434	Signal noise level too high	B	4.3.6
459	Reception error	C	4.3.7
490	Reception error	C	4.3.5
494	Reception error	C	4.3.7
495	Reception error	C	4.3.7
630	Remote unit busy	B	4.3.11
634	No busy tone detected	B	-

Phase

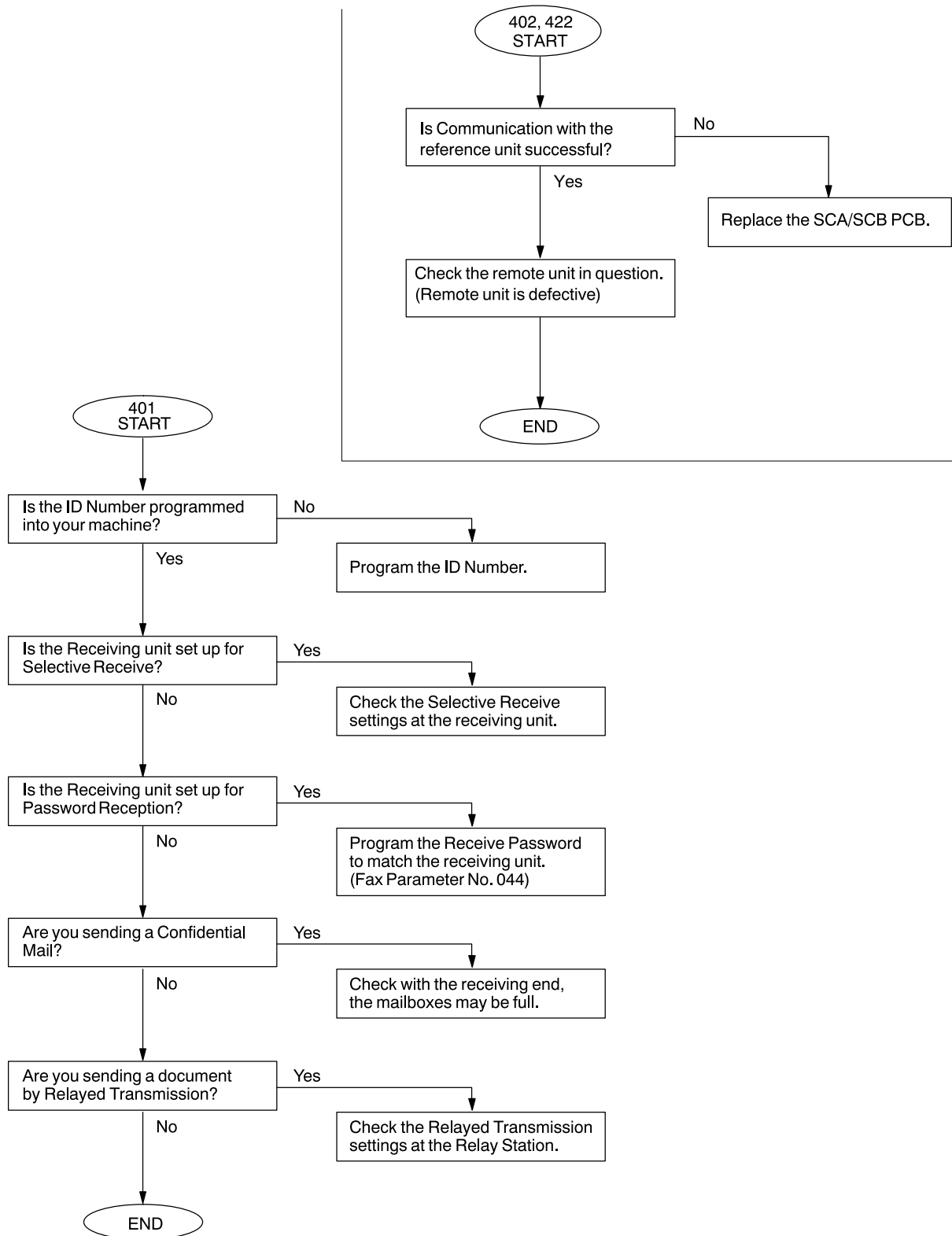


- Phase A: Call establishment
- Phase B: Pre-message procedure
- Phase C: Message transmission
- Phase D: Post-message procedure
- Phase E: Call release

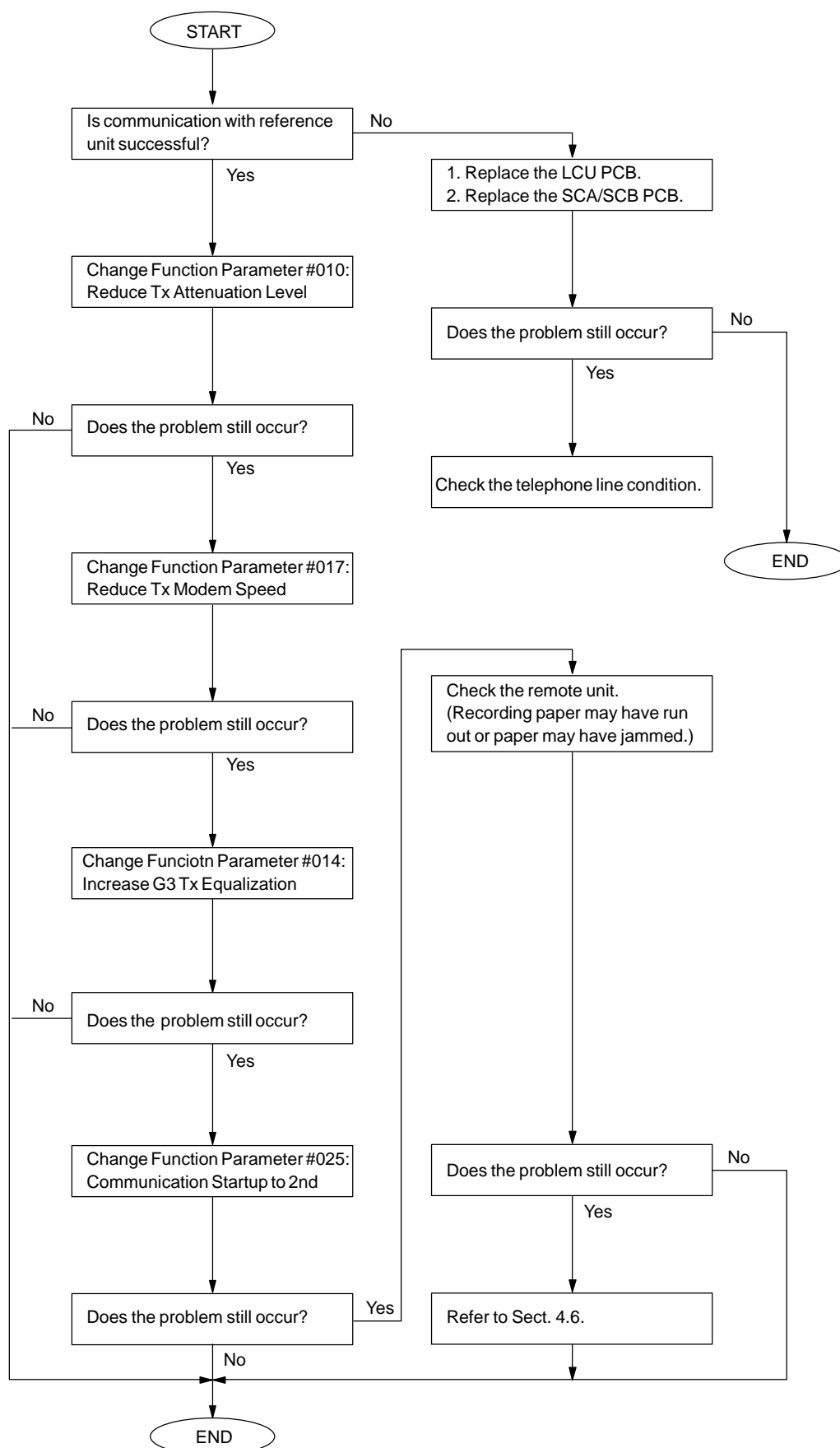
4.3.1 Information Codes: 400, 420



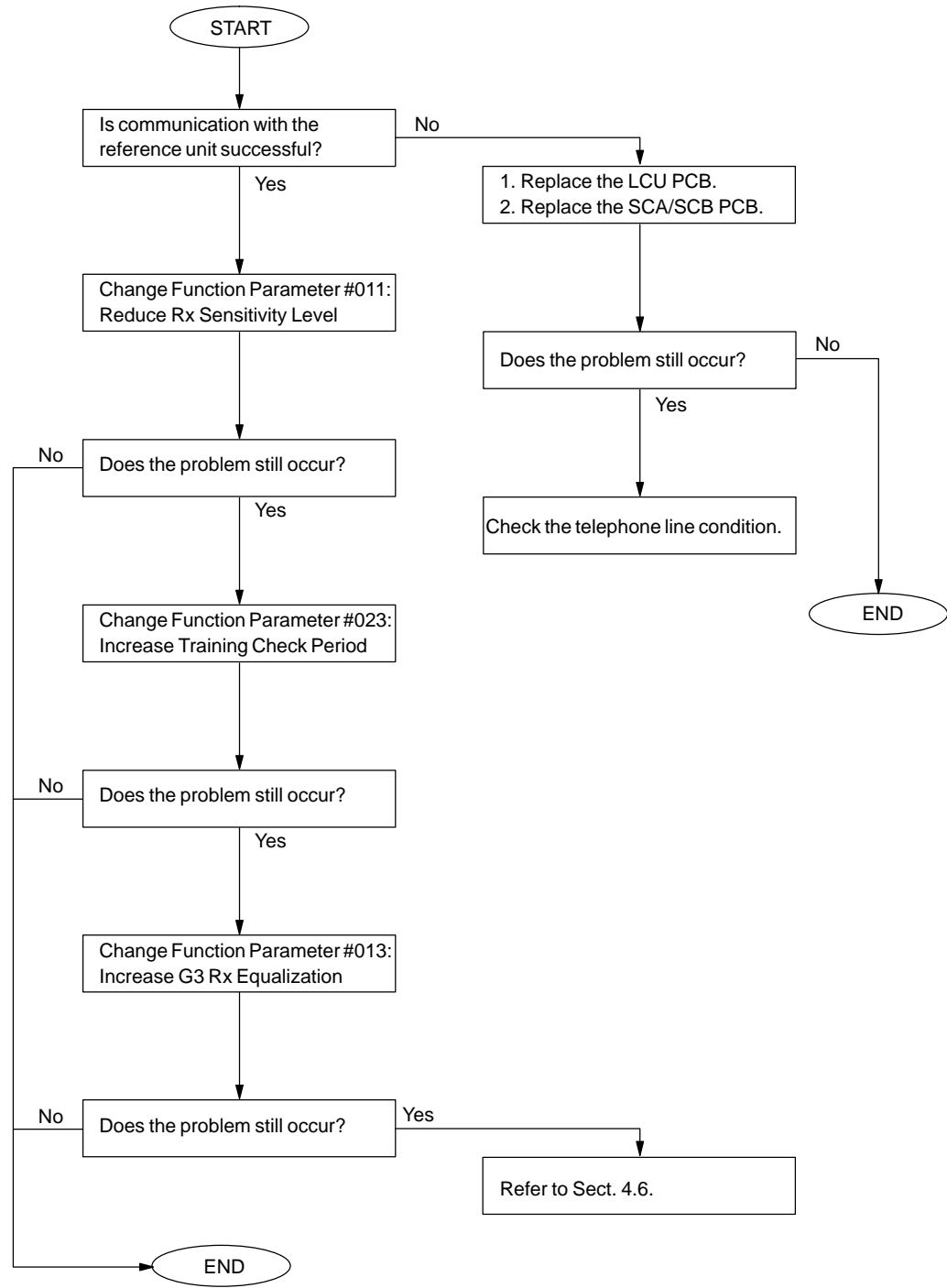
4.3.2 Information Codes: 401, 402, 422



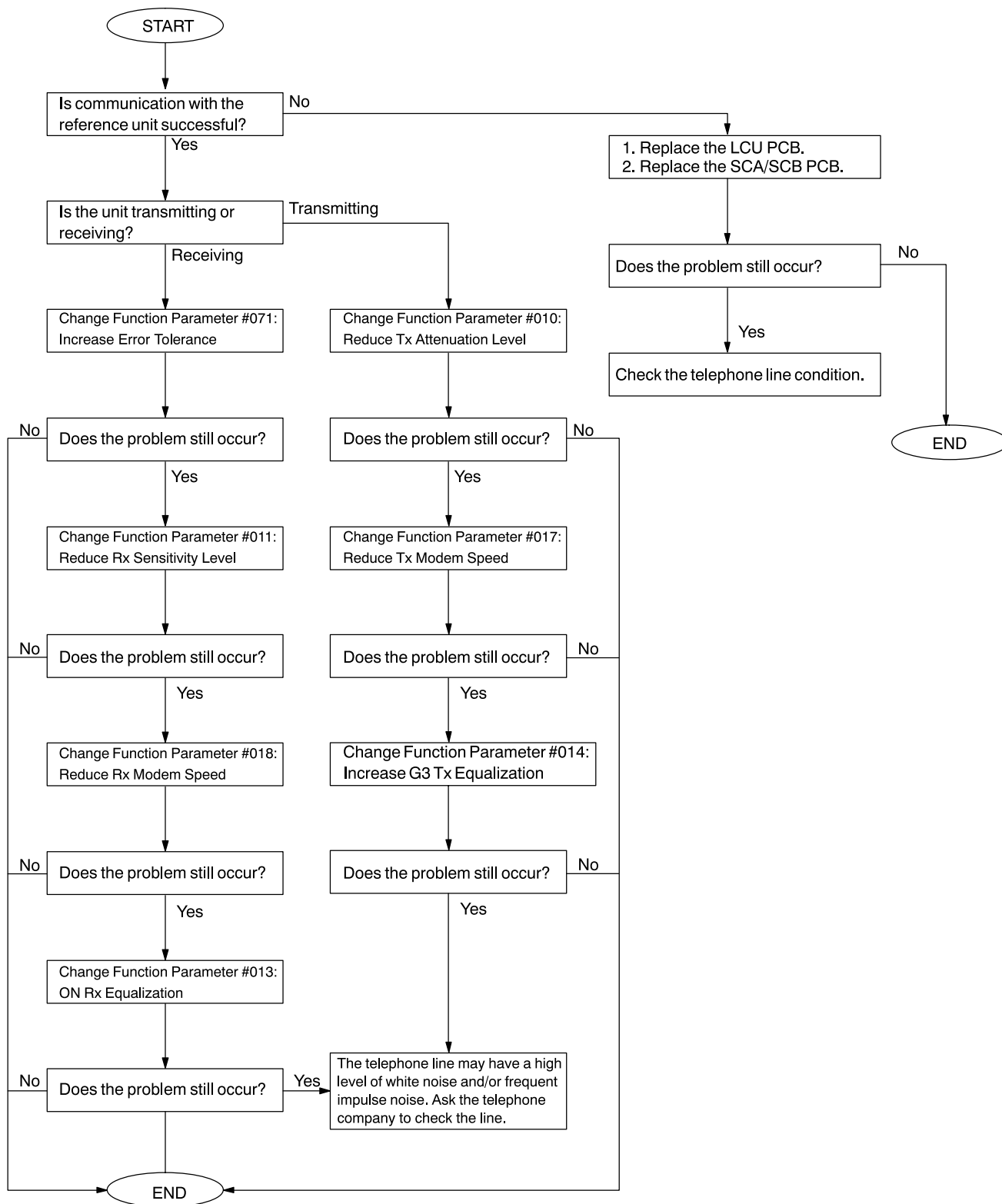
4.3.3 Information Codes: 404, 405, 407



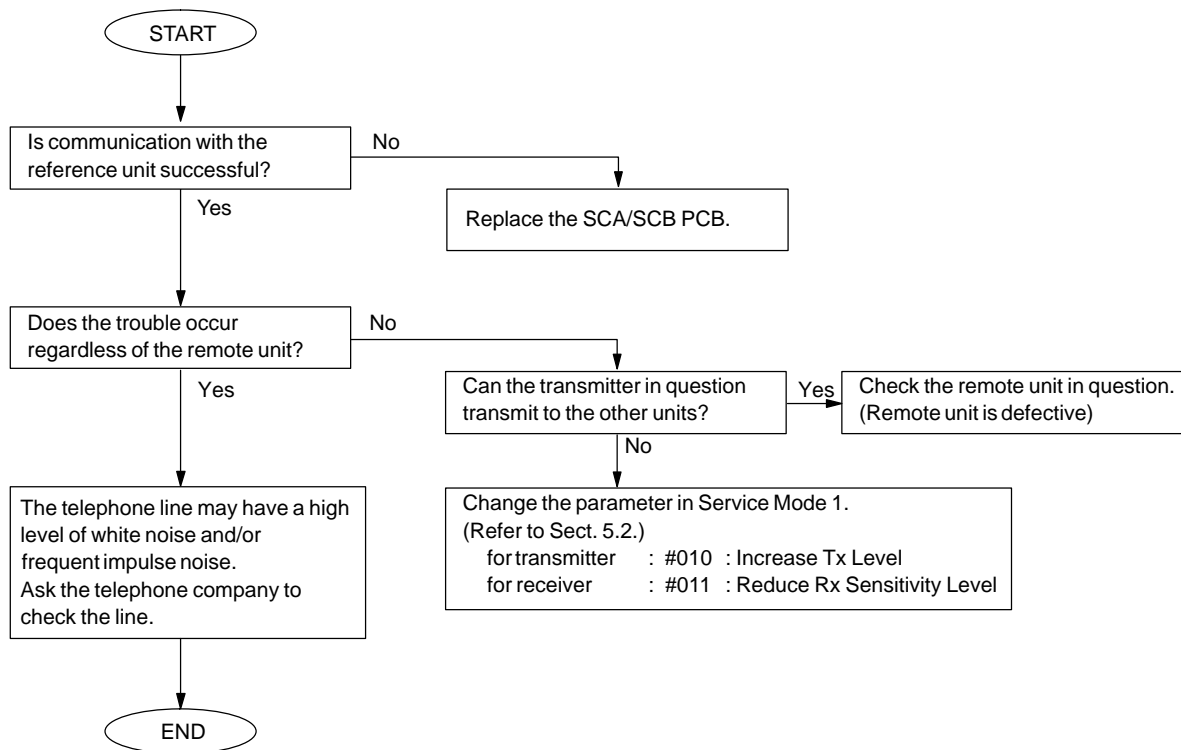
4.3.4 Information Code: 416



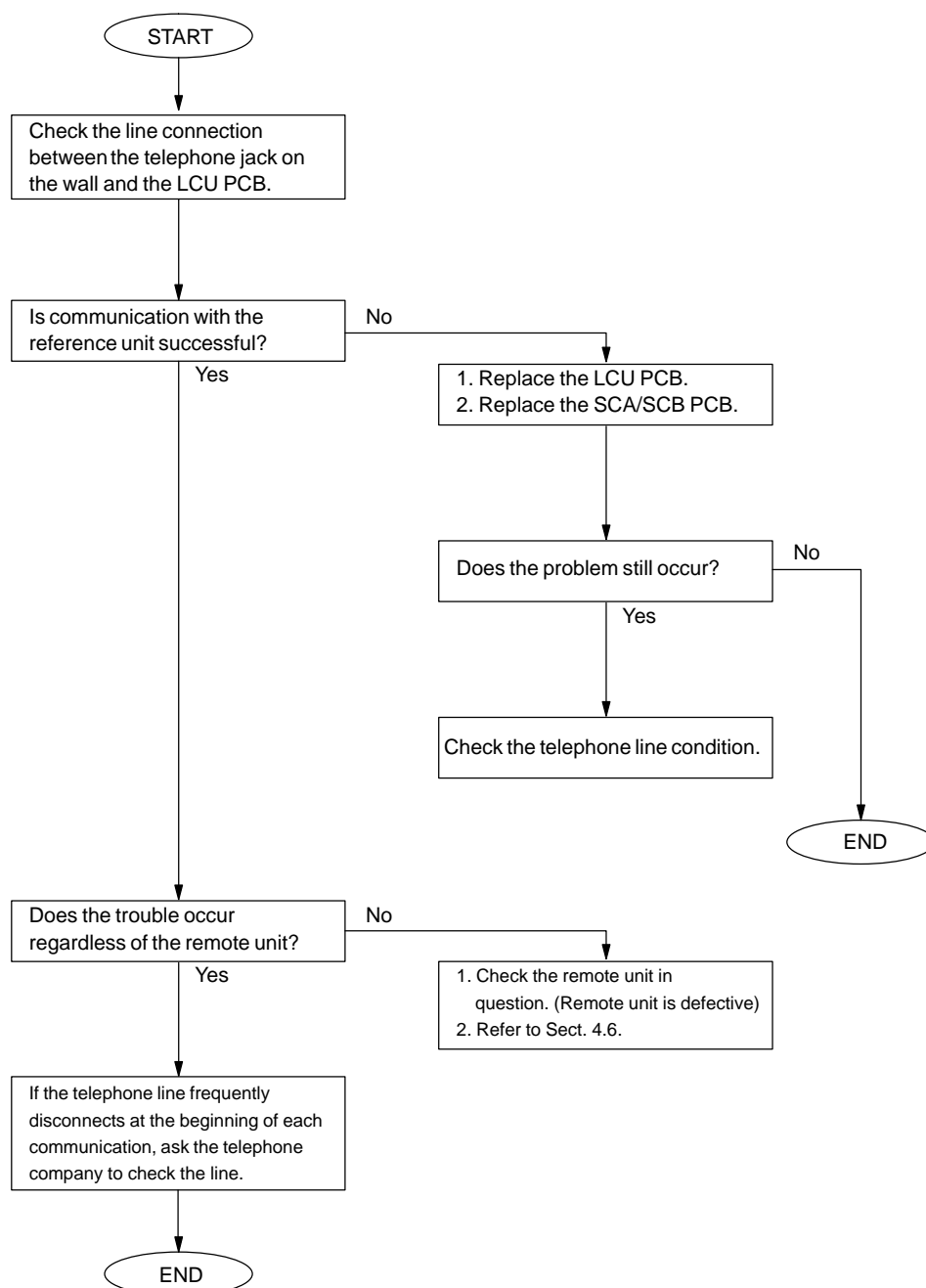
4.3.5 Information Codes: 408, 409, 417, 418, 490



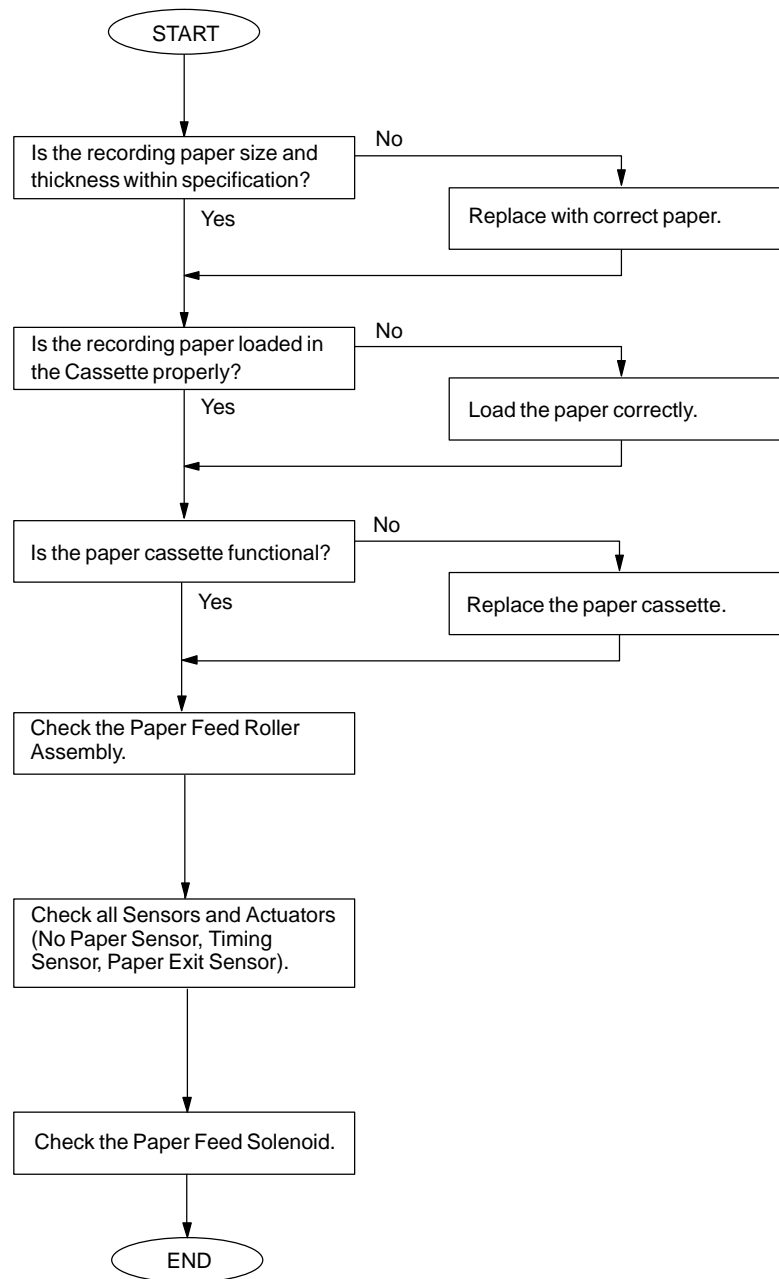
4.3.6 Information Code: 434



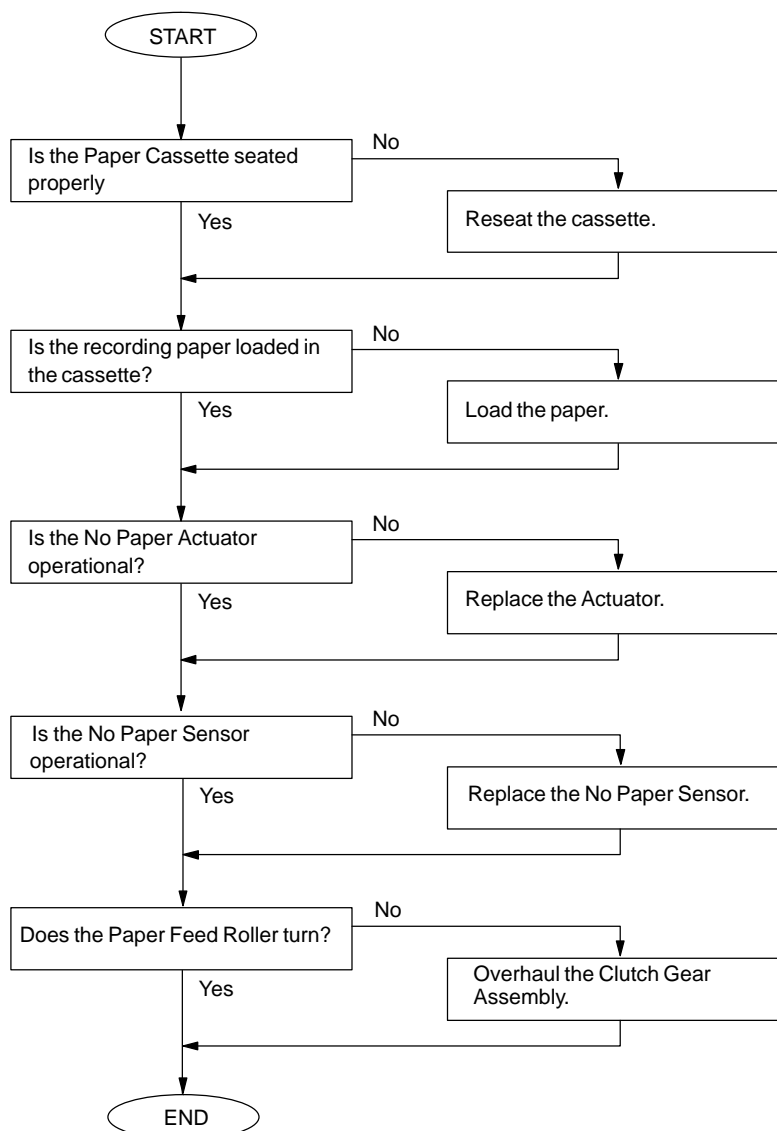
4.3.7 Information Codes: 459, 494, 495

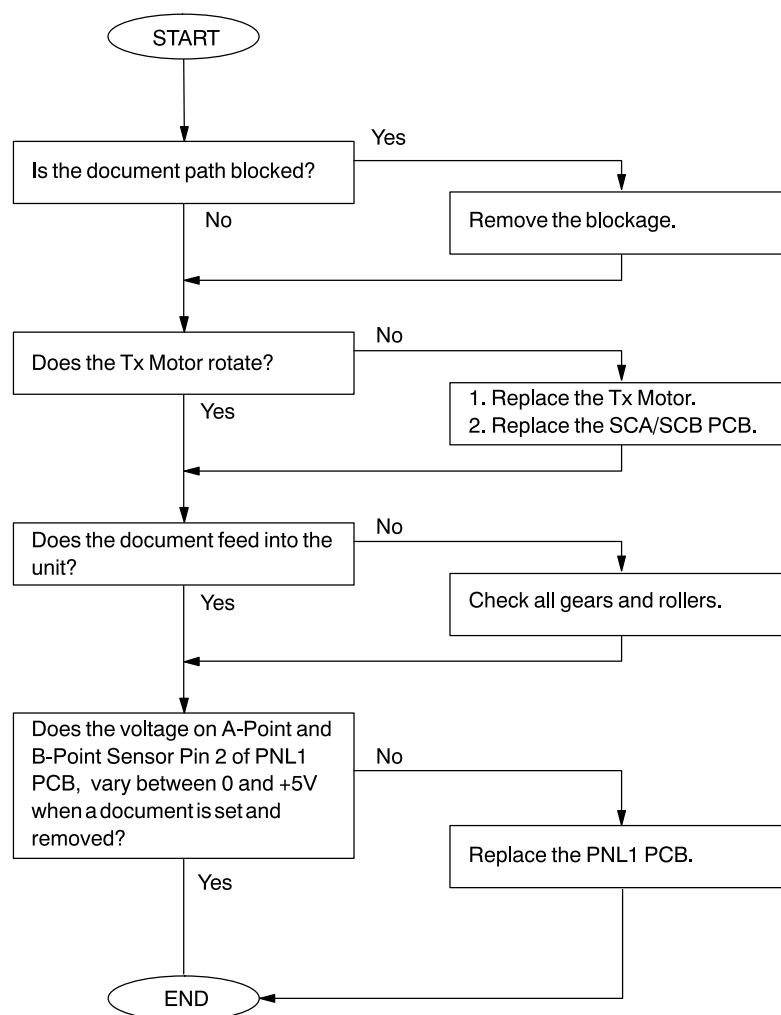


4.3.8 Information Codes: 001, 002, 007 (Recording Paper Jam)

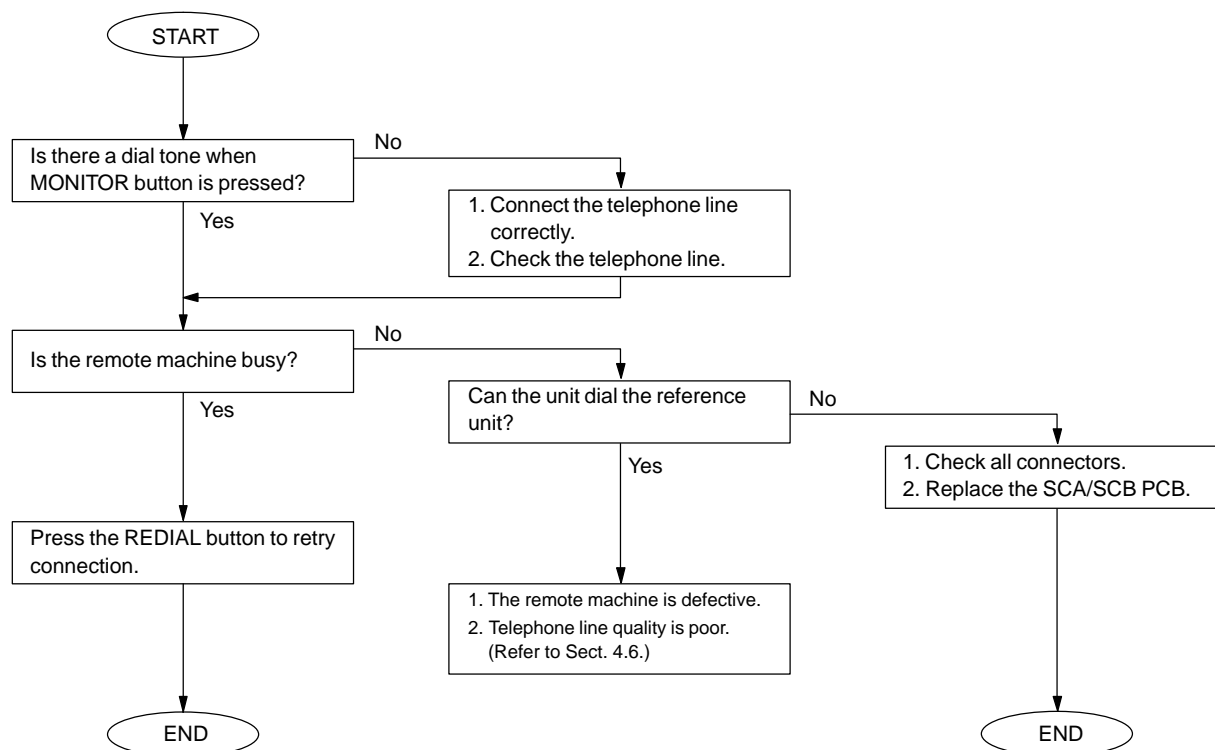


4.3.9 Information Code: 010 (No Recording Paper)

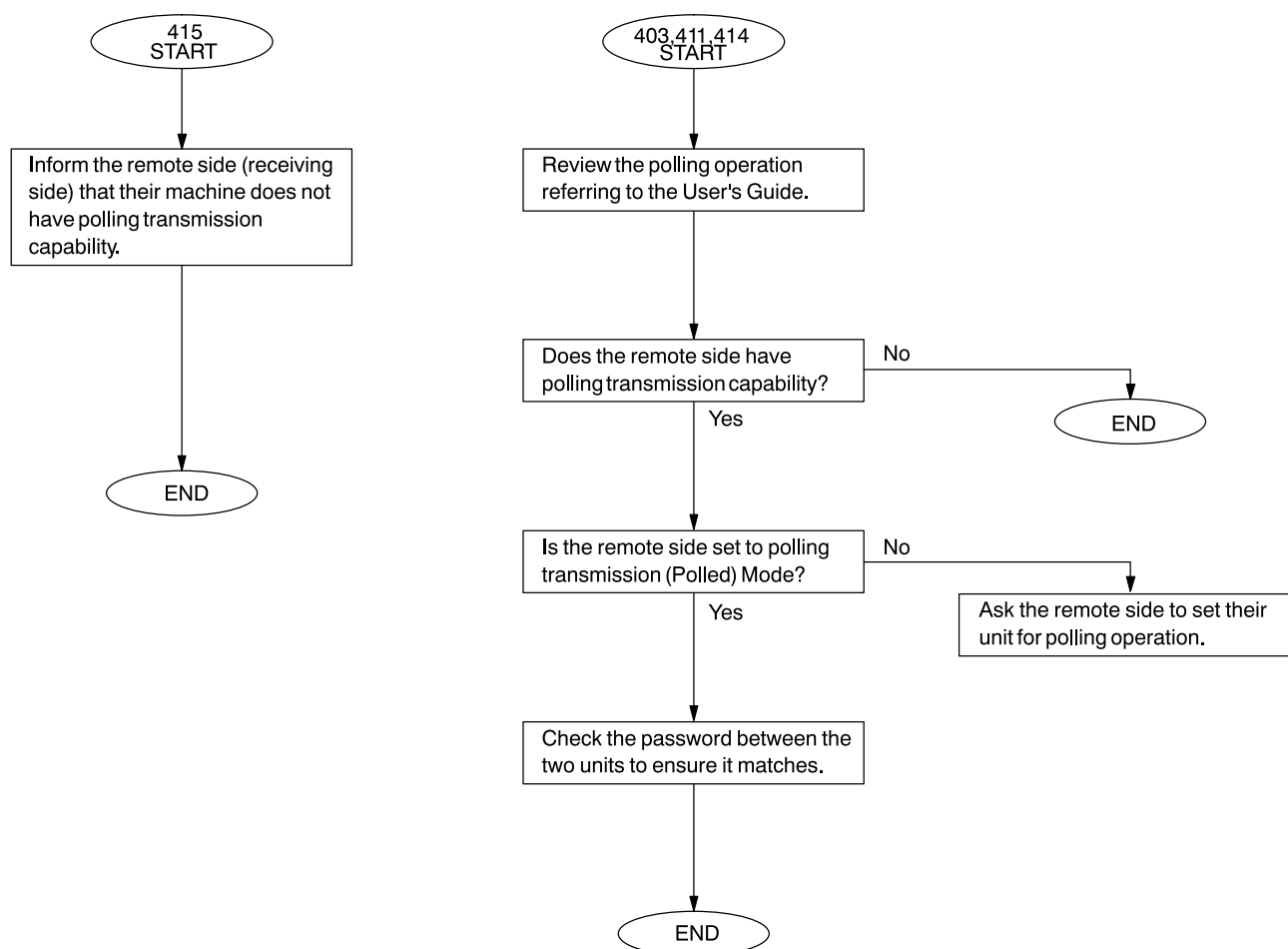


4.3.10 Information Codes: 030, 031 (Document Jam)

4.3.11 Information Code: 630 (Dialing Error)



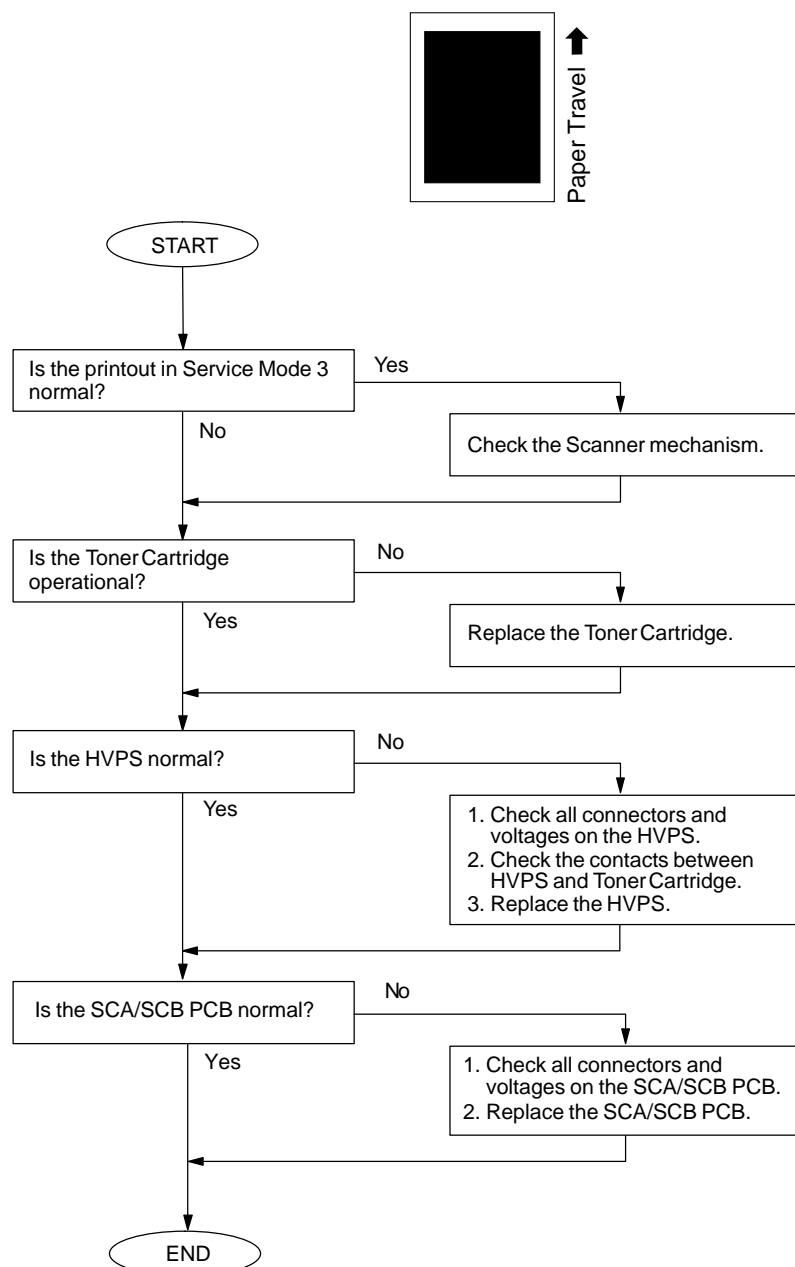
4.3.12 Information Codes: 403, 411, 414, 415 (Polling Operator Trouble)



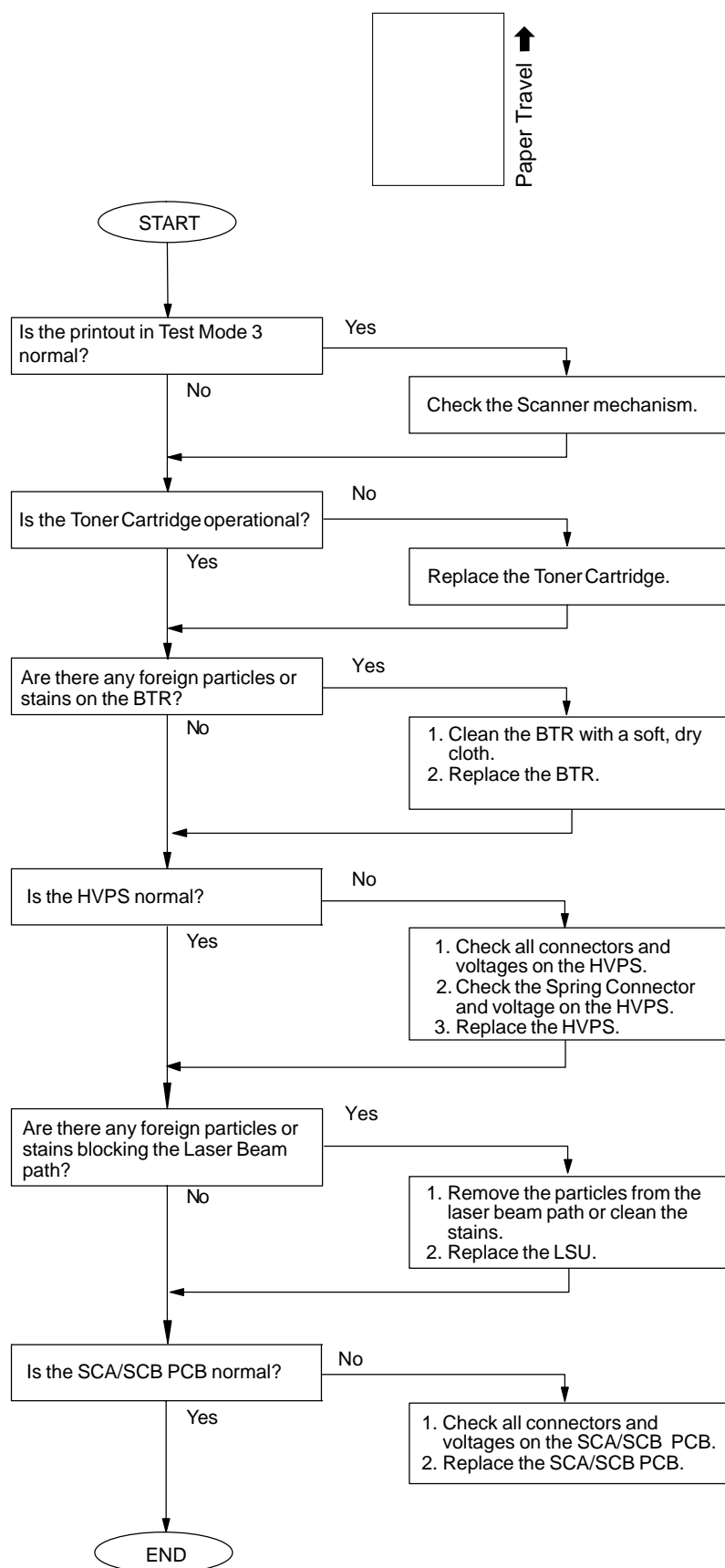
Polling communication with 4-digit password is not an ITU-T Standard feature.
If the transmitter and receiver are of different manufacturers, polling communication with password *may not* be possible.

4.4 Printed Copy Quality Problems

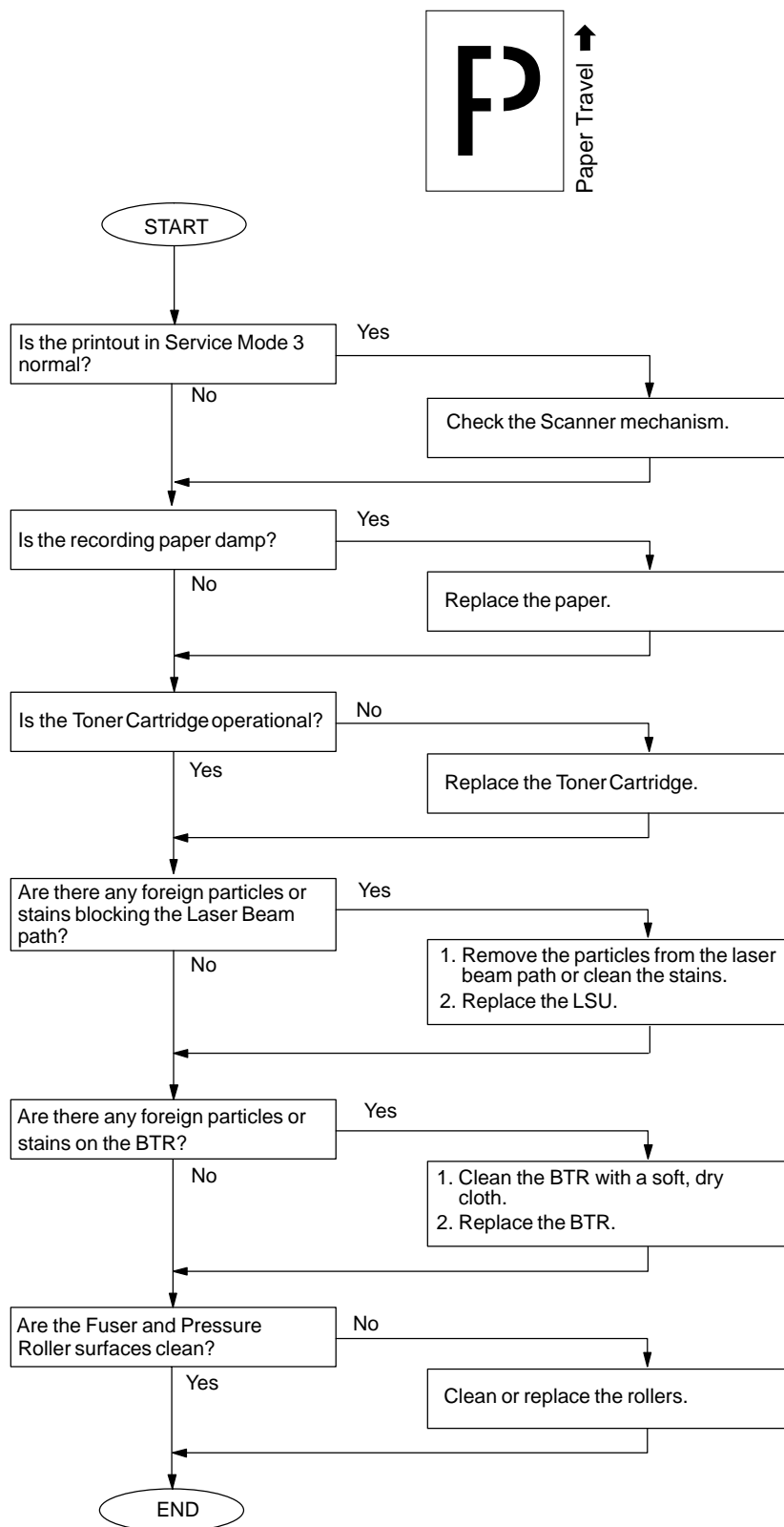
4.4.1 Black Copy



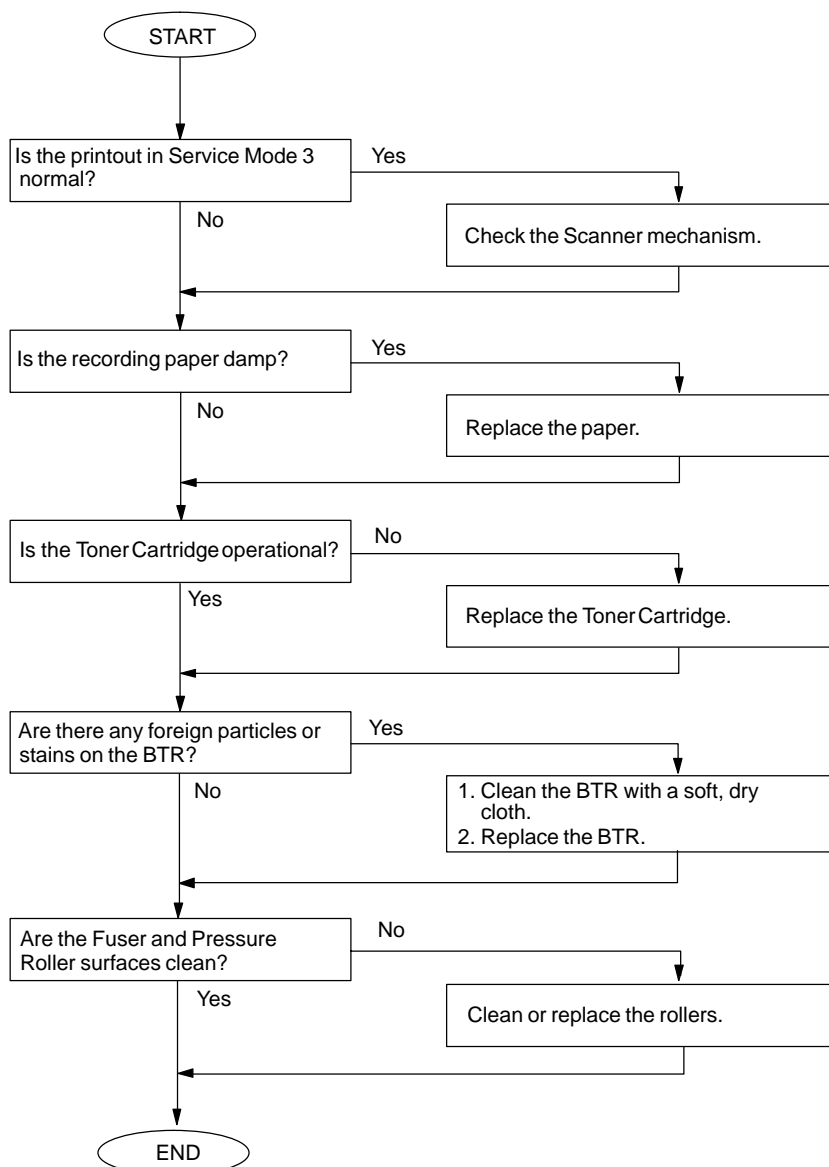
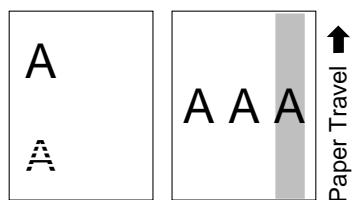
4.4.2 Blank Copy



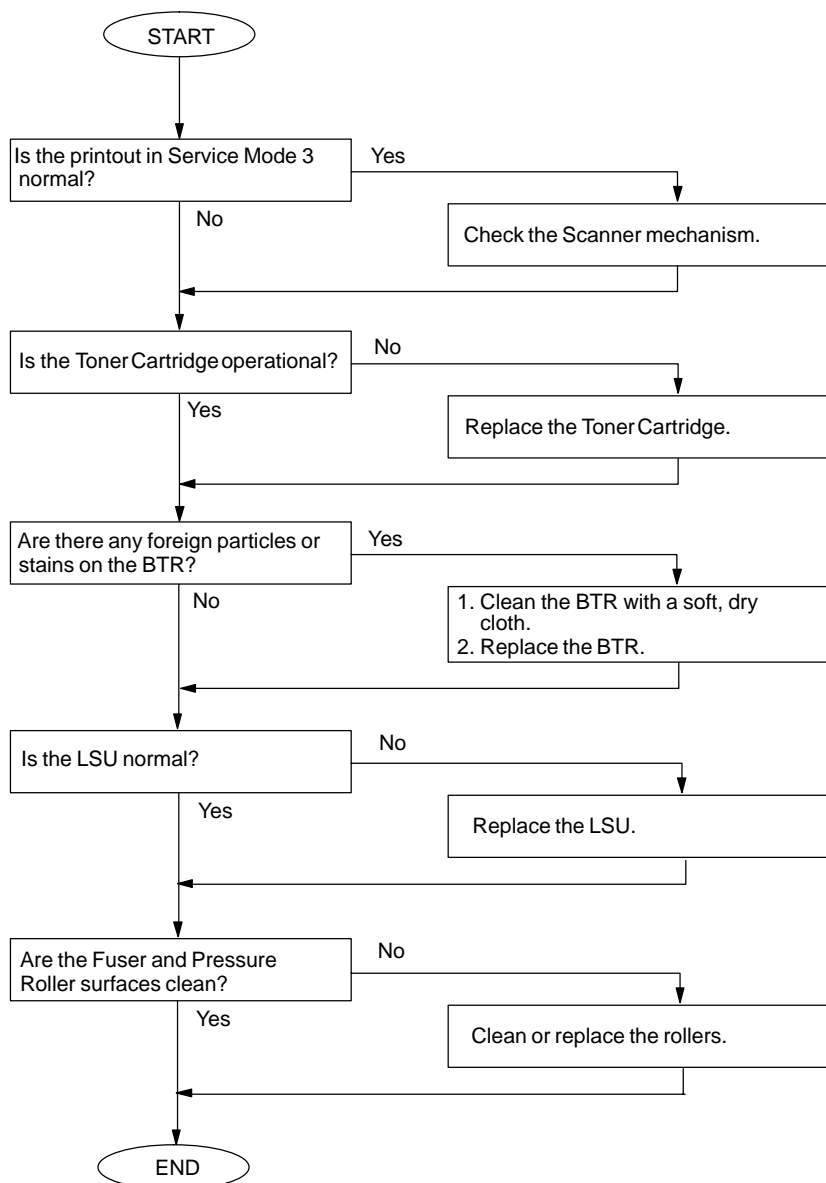
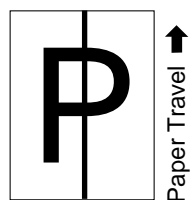
4.4.3 Vertical White Lines



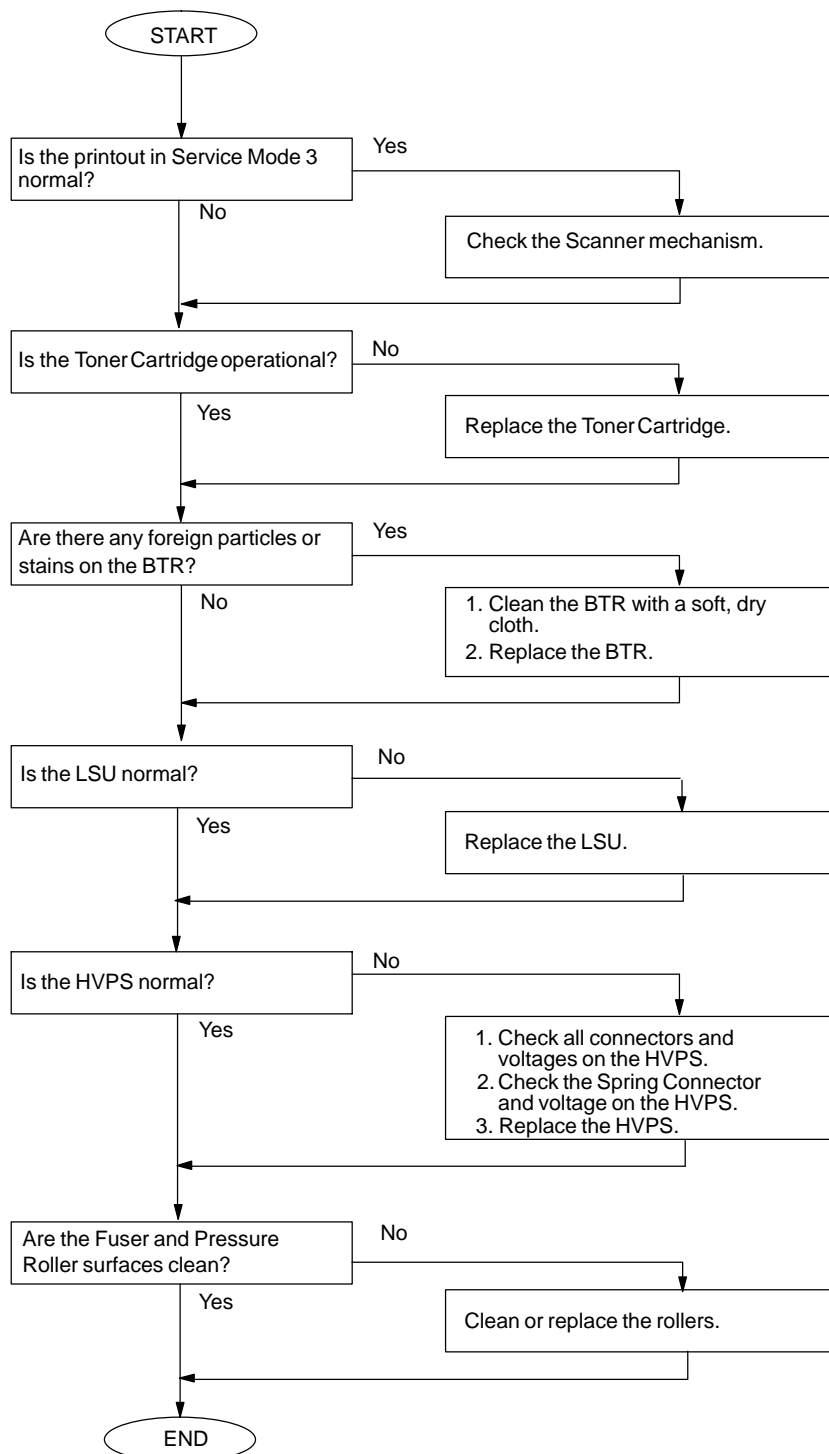
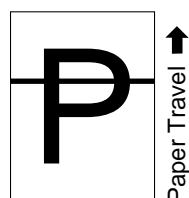
4.4.4 Ghost Images



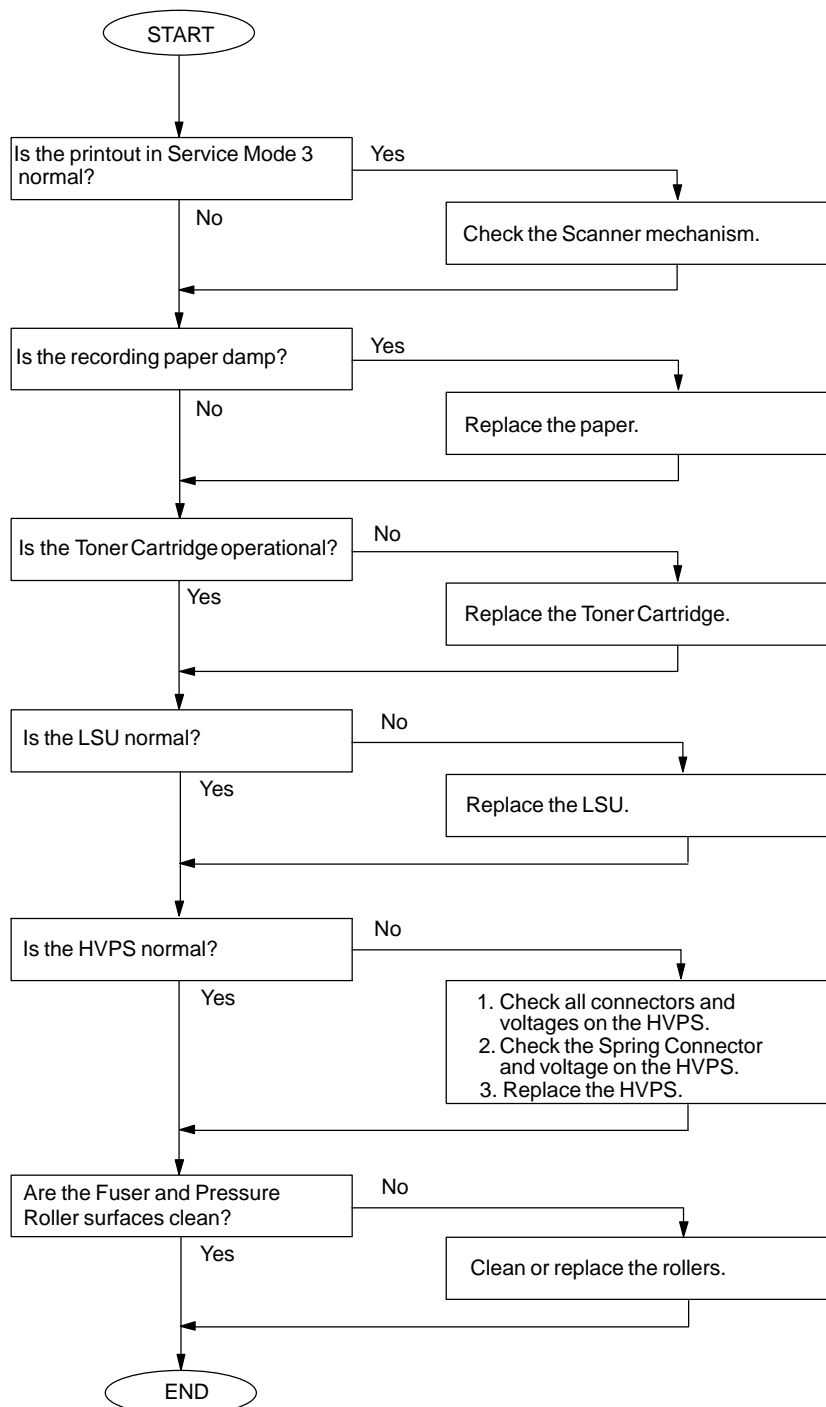
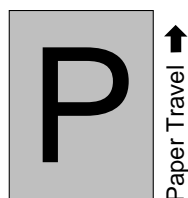
4.4.5 Vertical Dark Lines



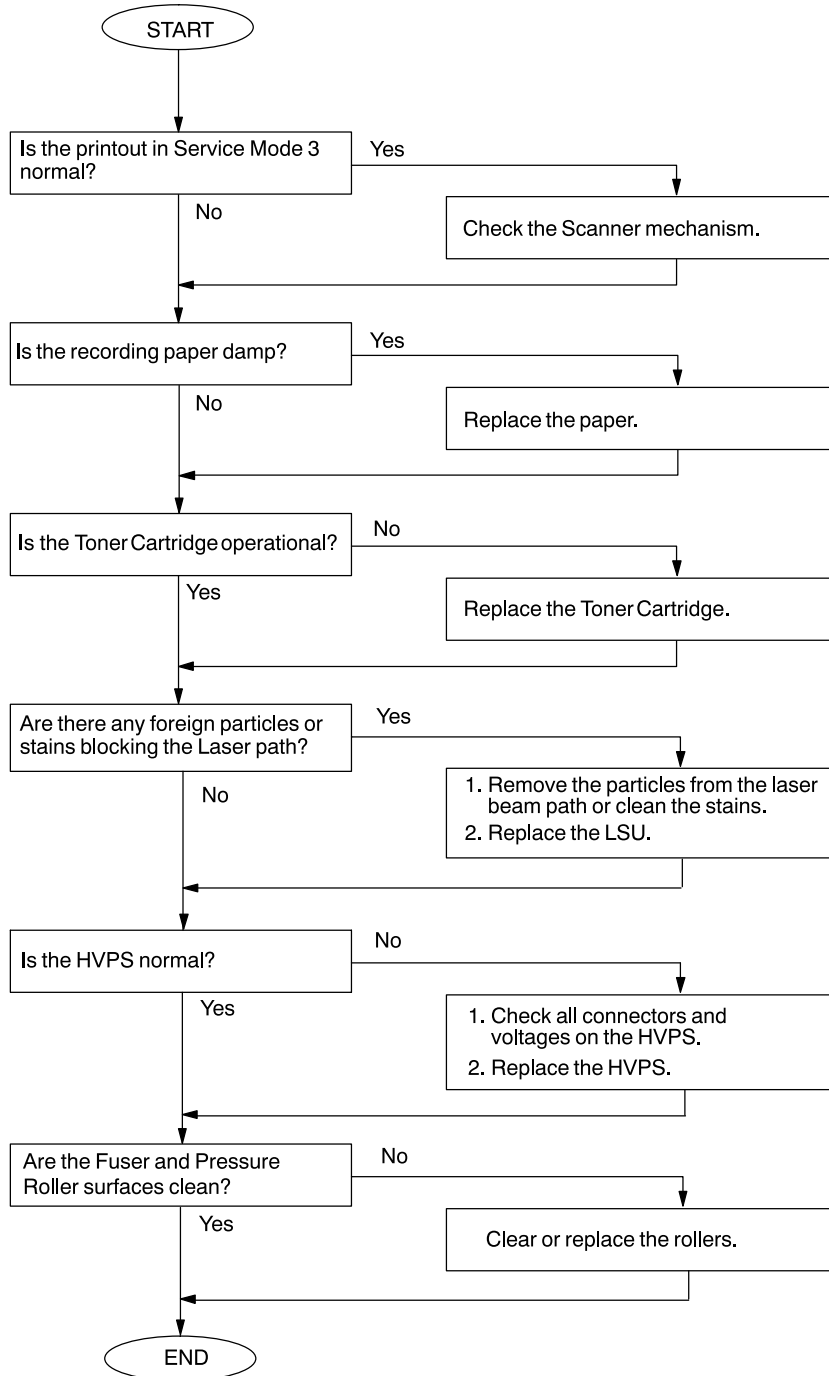
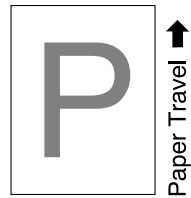
4.4.6 Horizontal Dark Lines



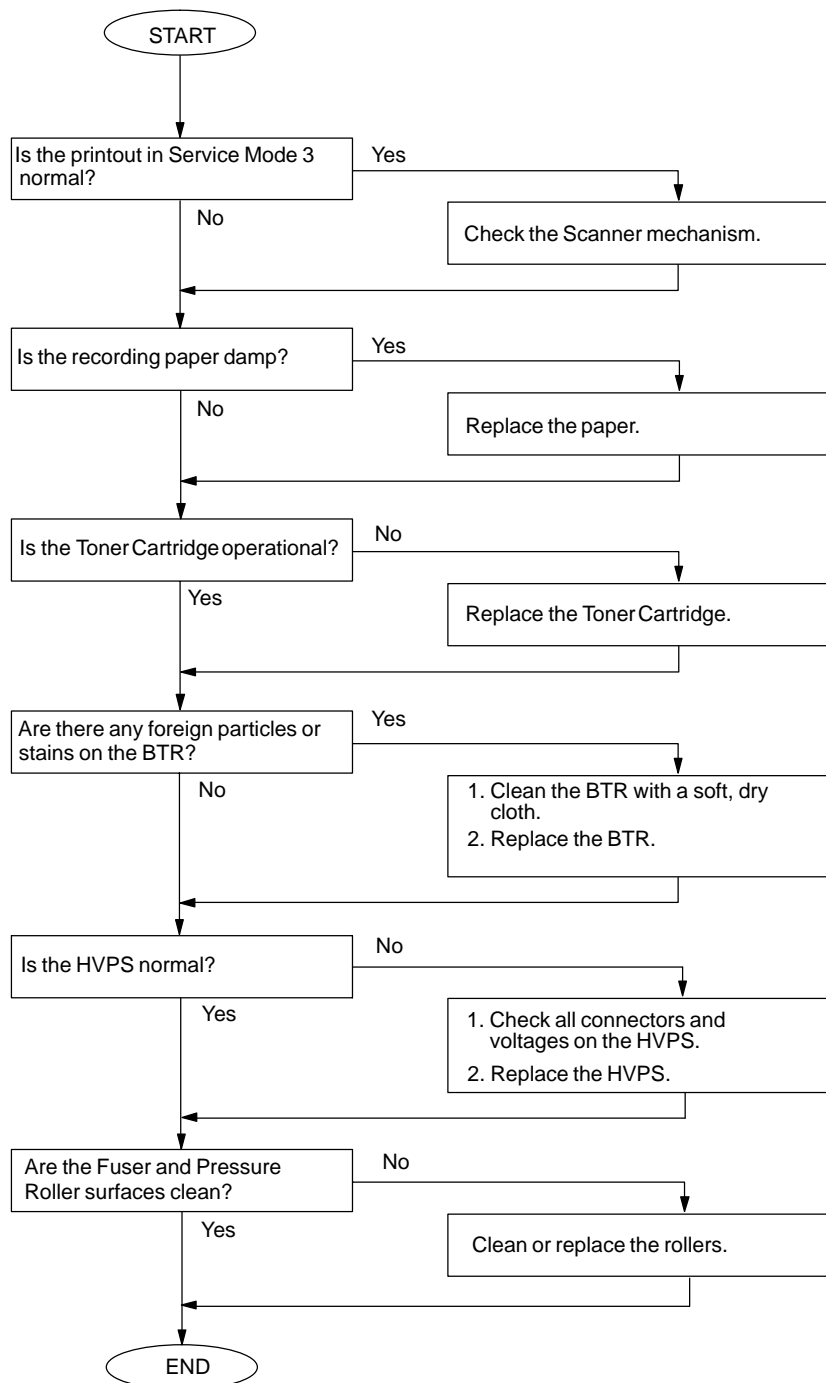
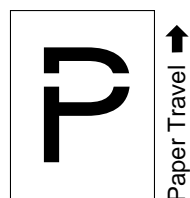
4.4.7 Dark Background



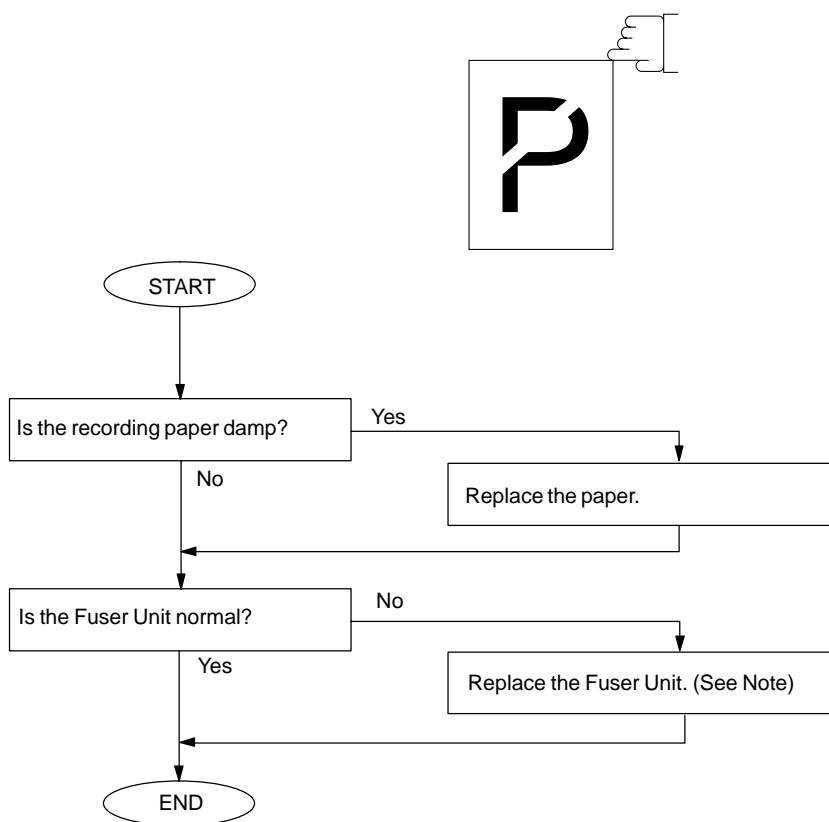
4.4.8 Light Print



4.4.9 Horizontal White Lines



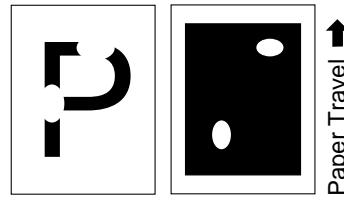
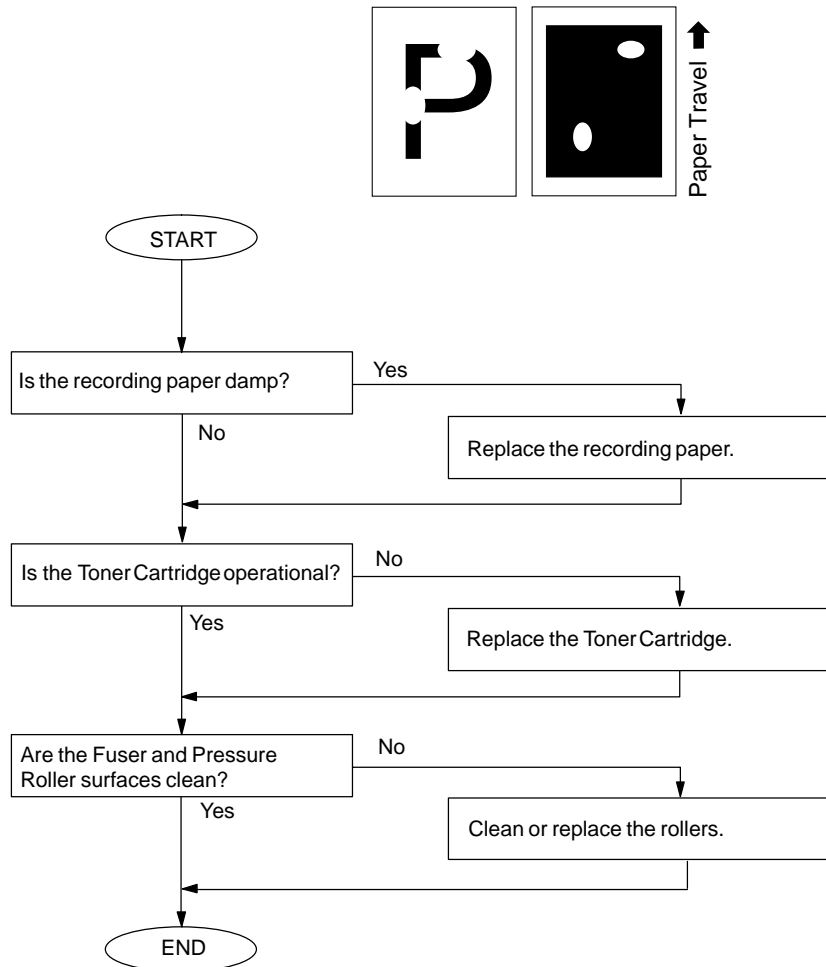
4.4.10 Improper Fusing (Printed image does not bond to the paper)



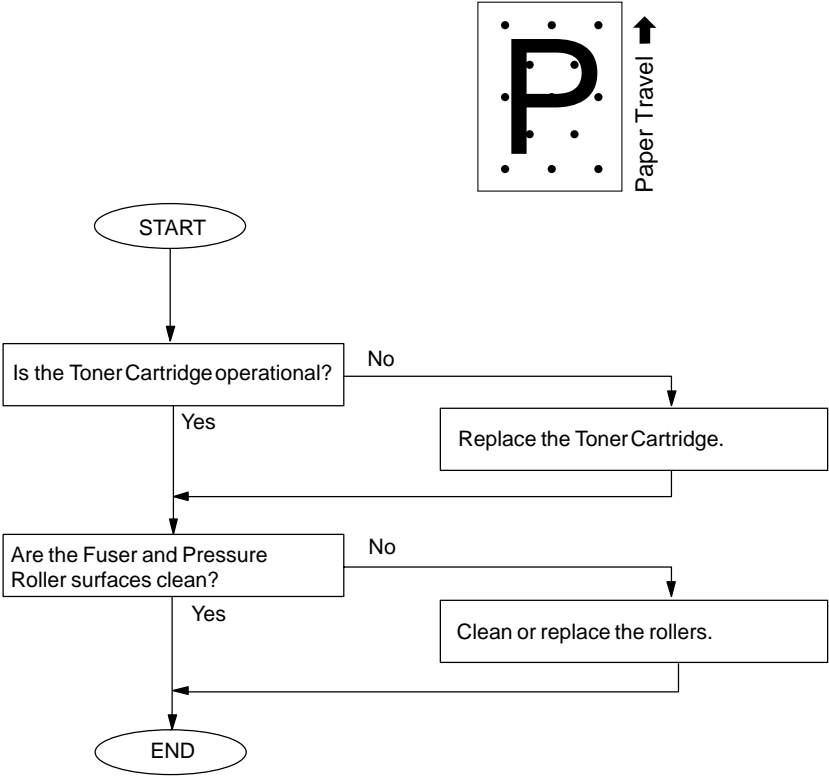
Note

Replace the entire Unit when the **Thermostat** or the **Thermal Fuse** becomes open-circuit.

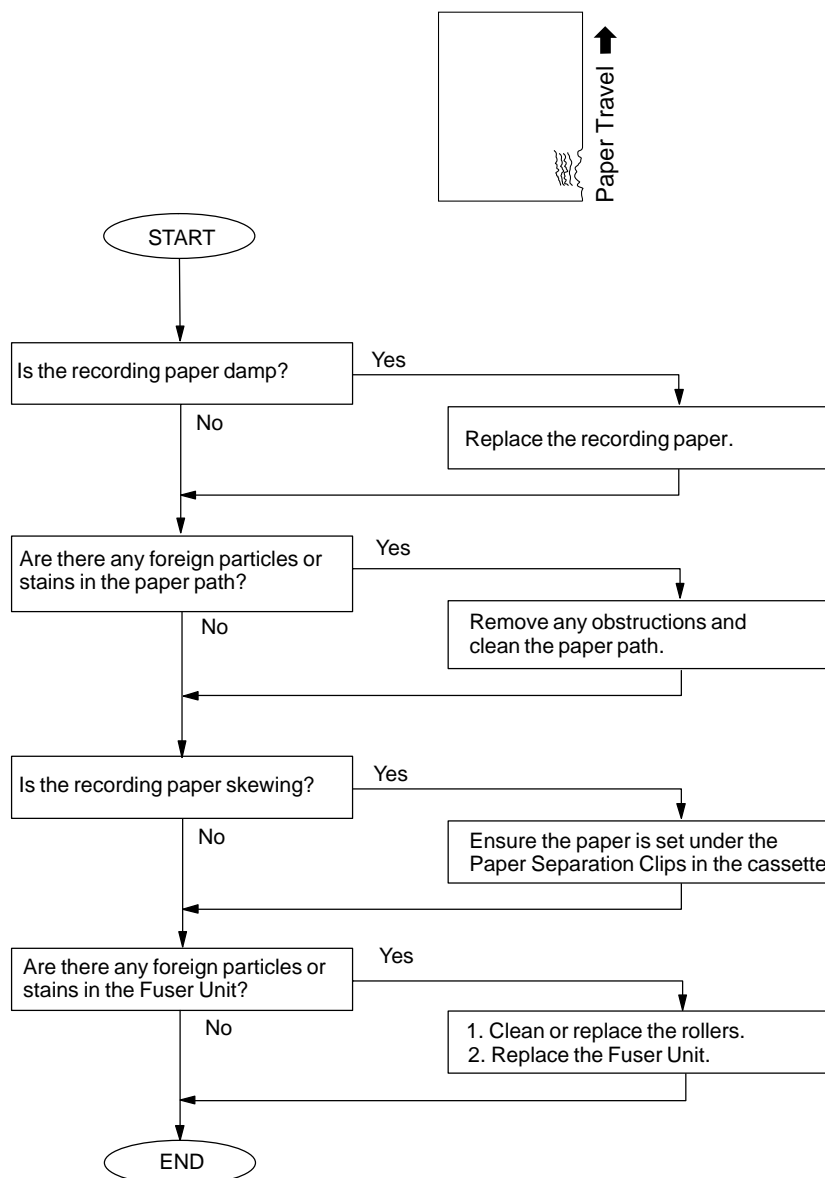
4.4.11 Voids in Solid Areas



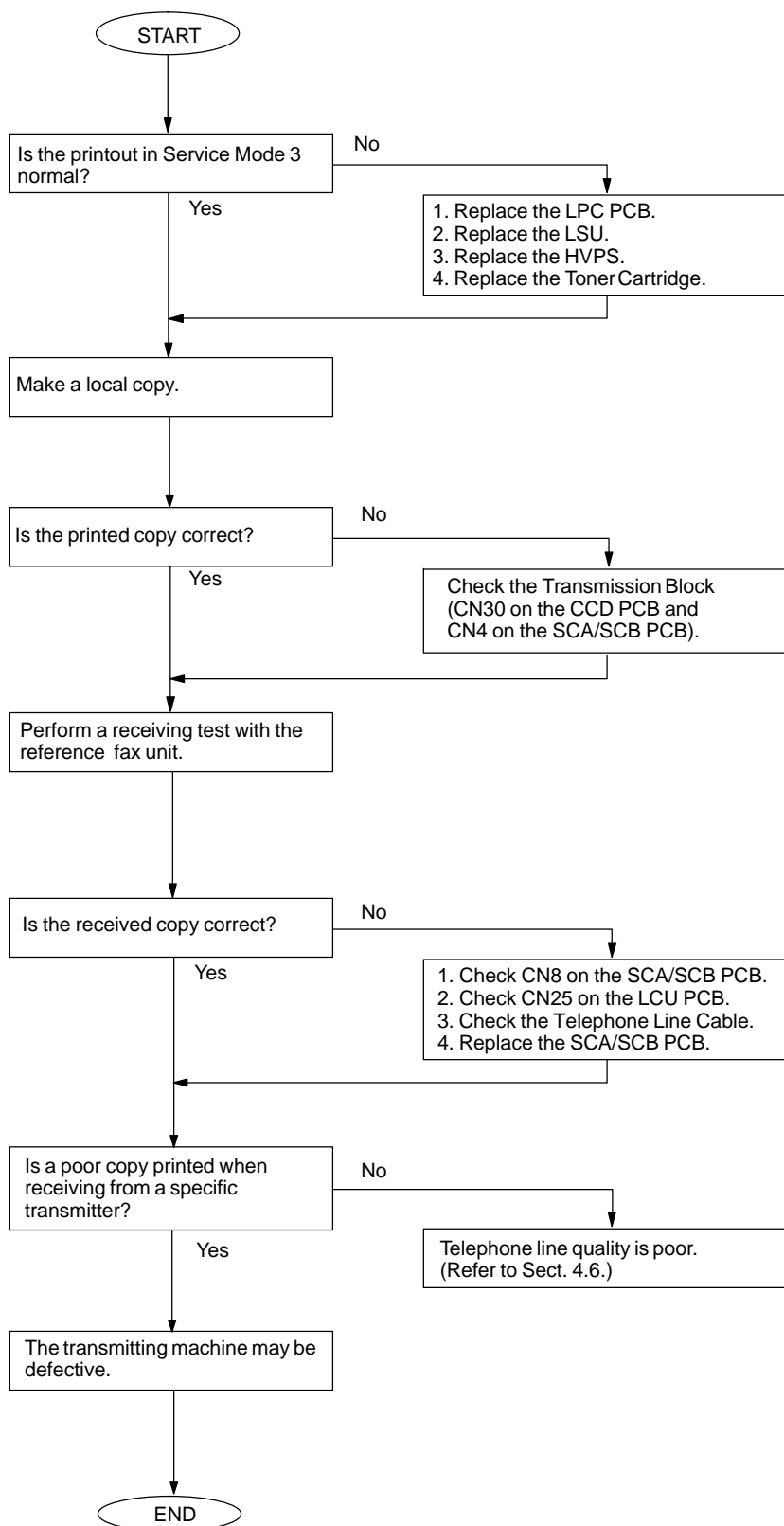
4.4.12 Black Dots



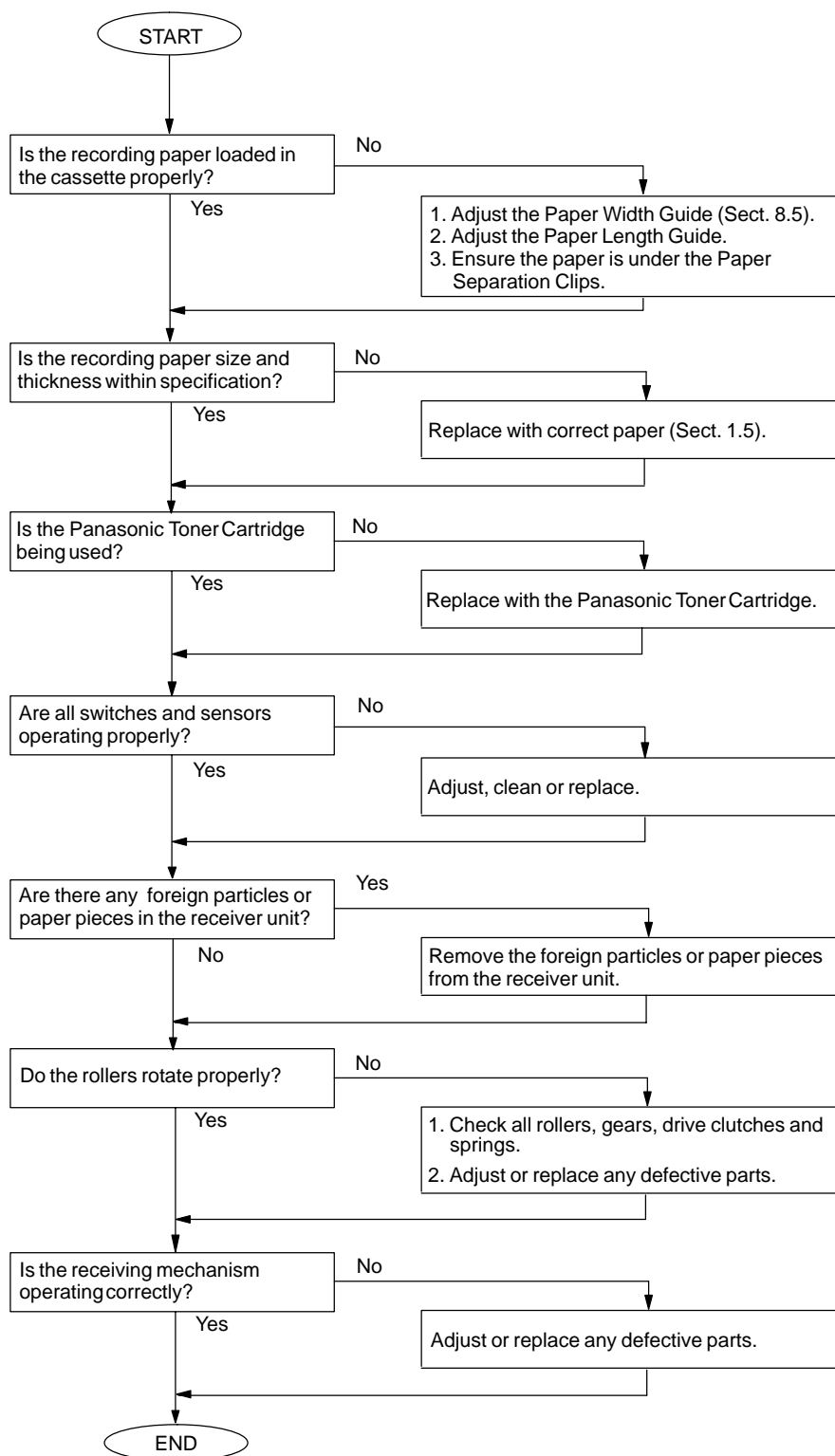
4.4.13 Recording Paper Creases



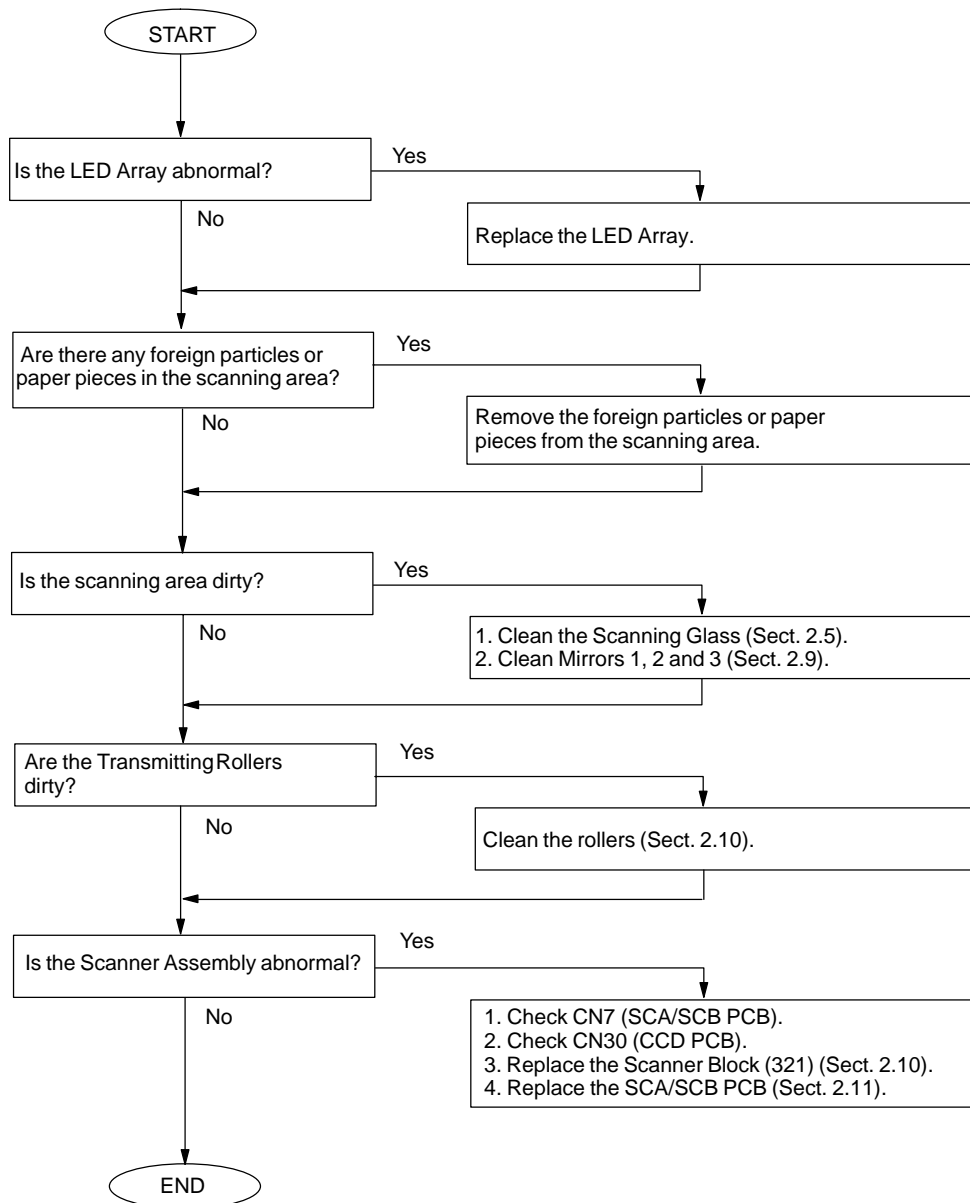
4.4.14 Poor Printed Copy Quality



4.4.15 Abnormal Printing

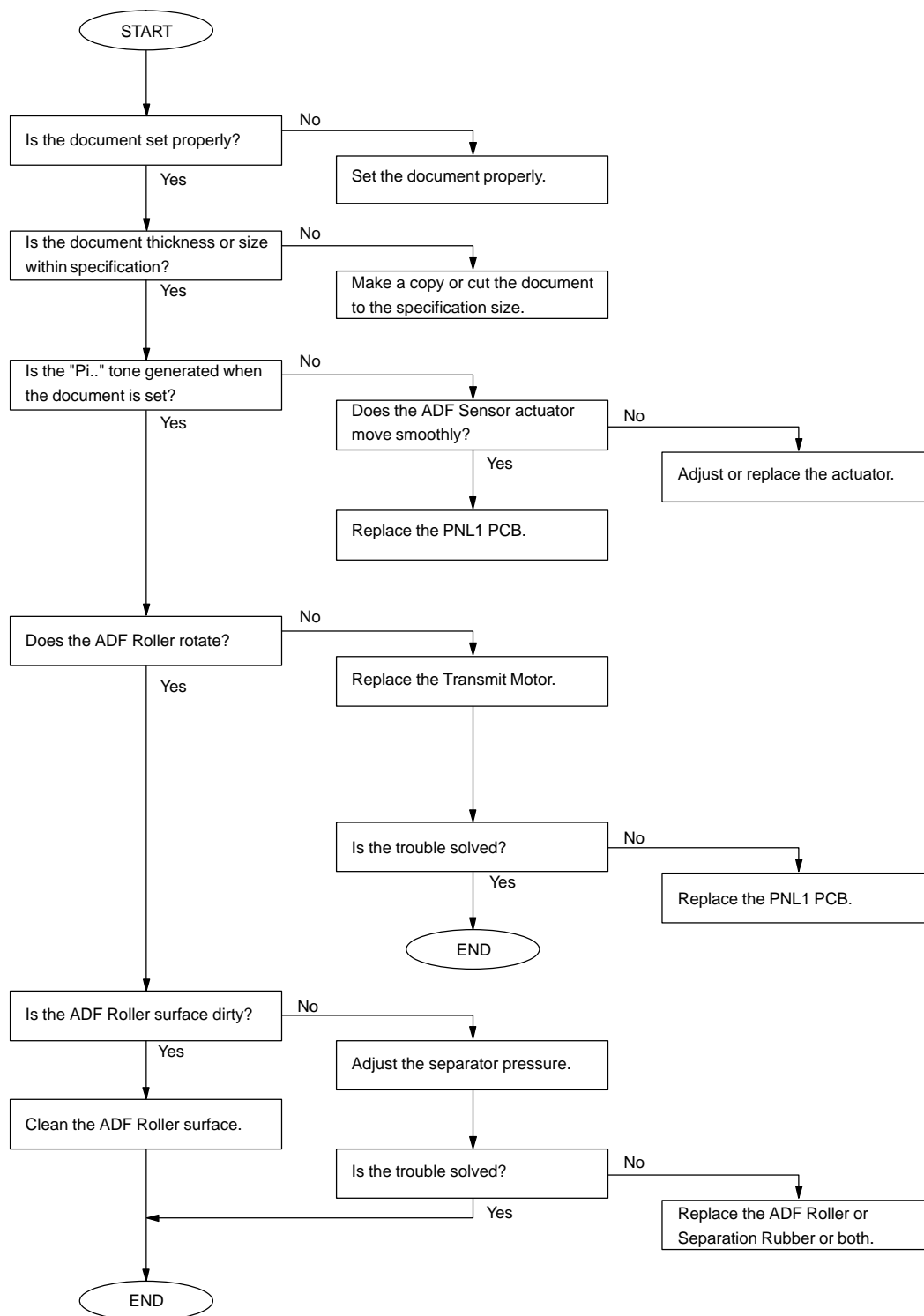


4.4.16 Scanned Copy Quality Problems

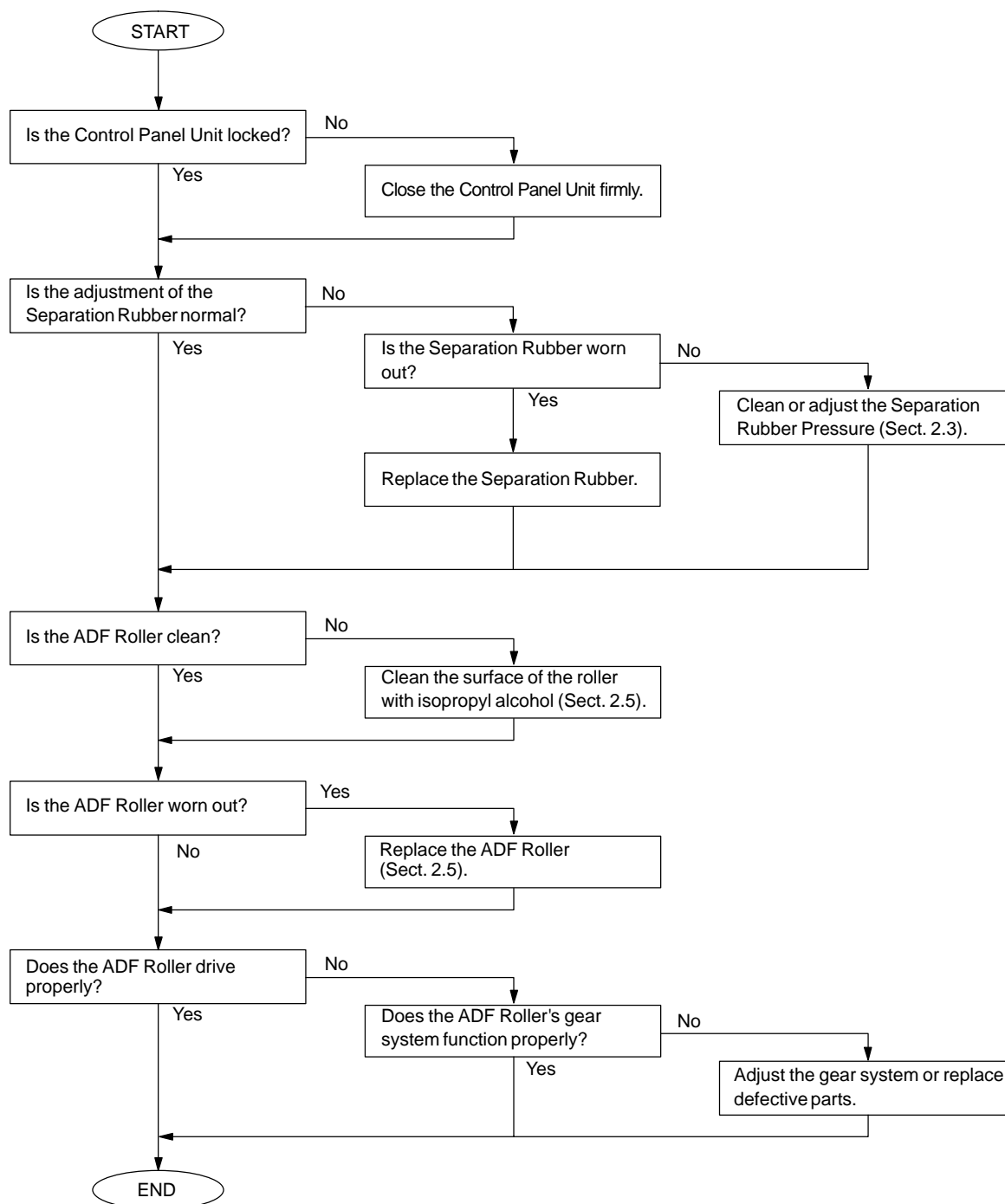


4.5 Document Feeder (ADF)

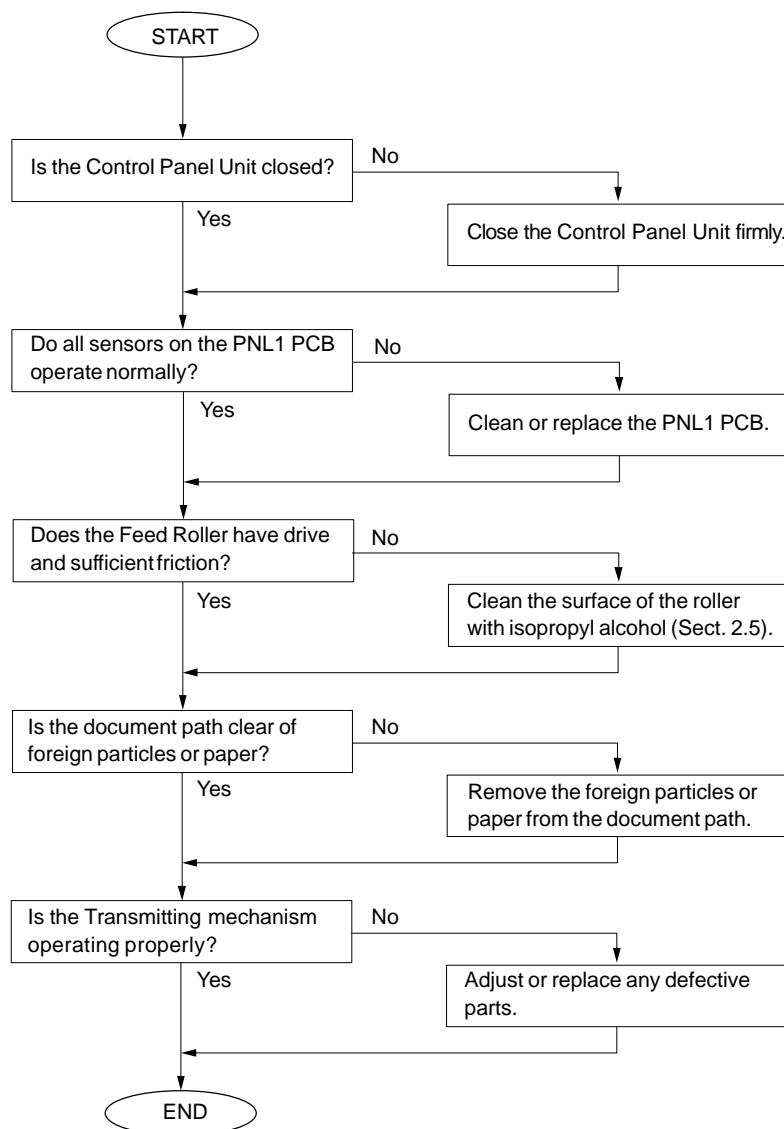
4.5.1 No Document Feed



4.5.2 Document does not feed or Multiple feeds



4.5.3 Document Jam (030) or Skewing

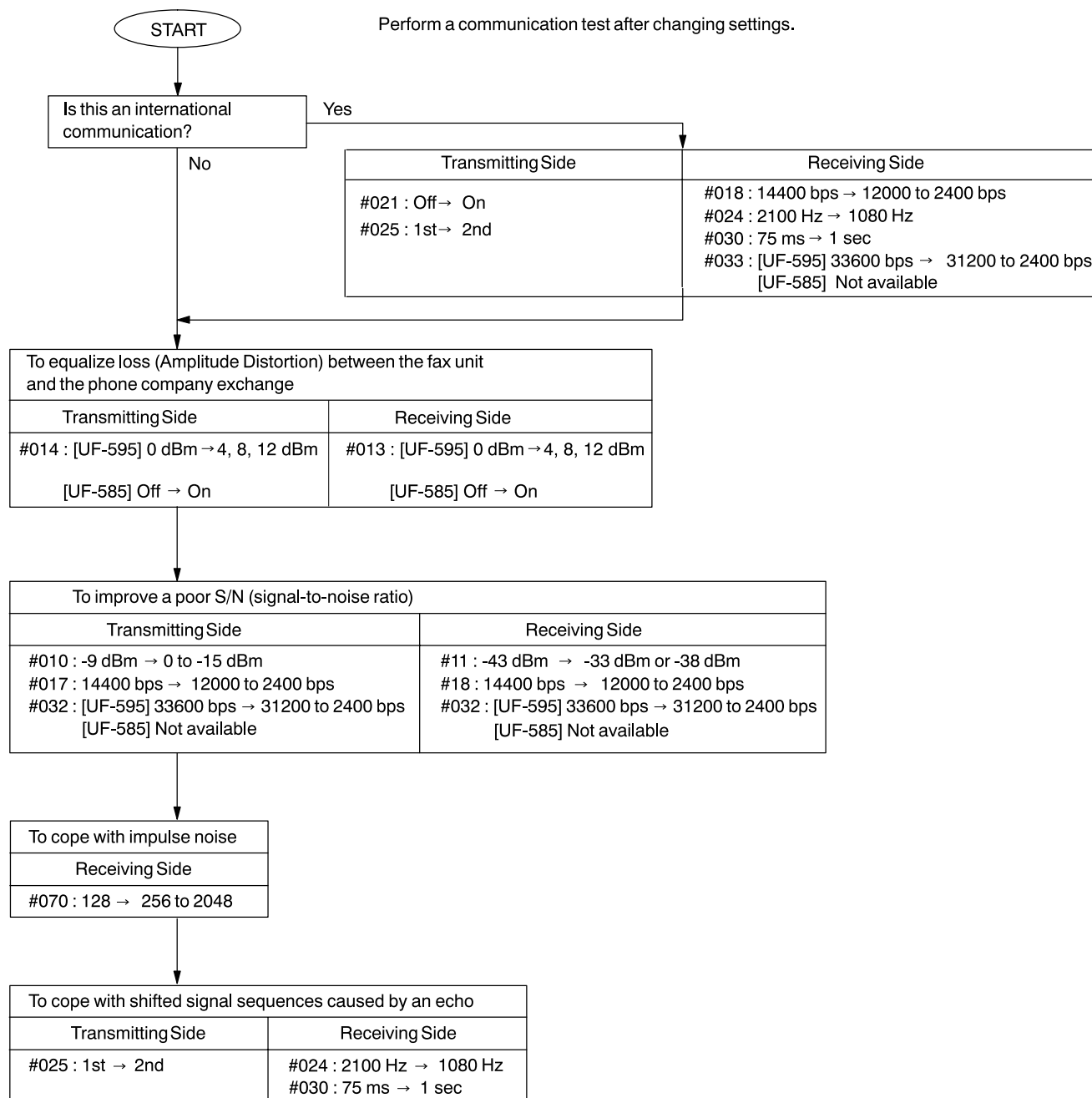


4.6 Communications

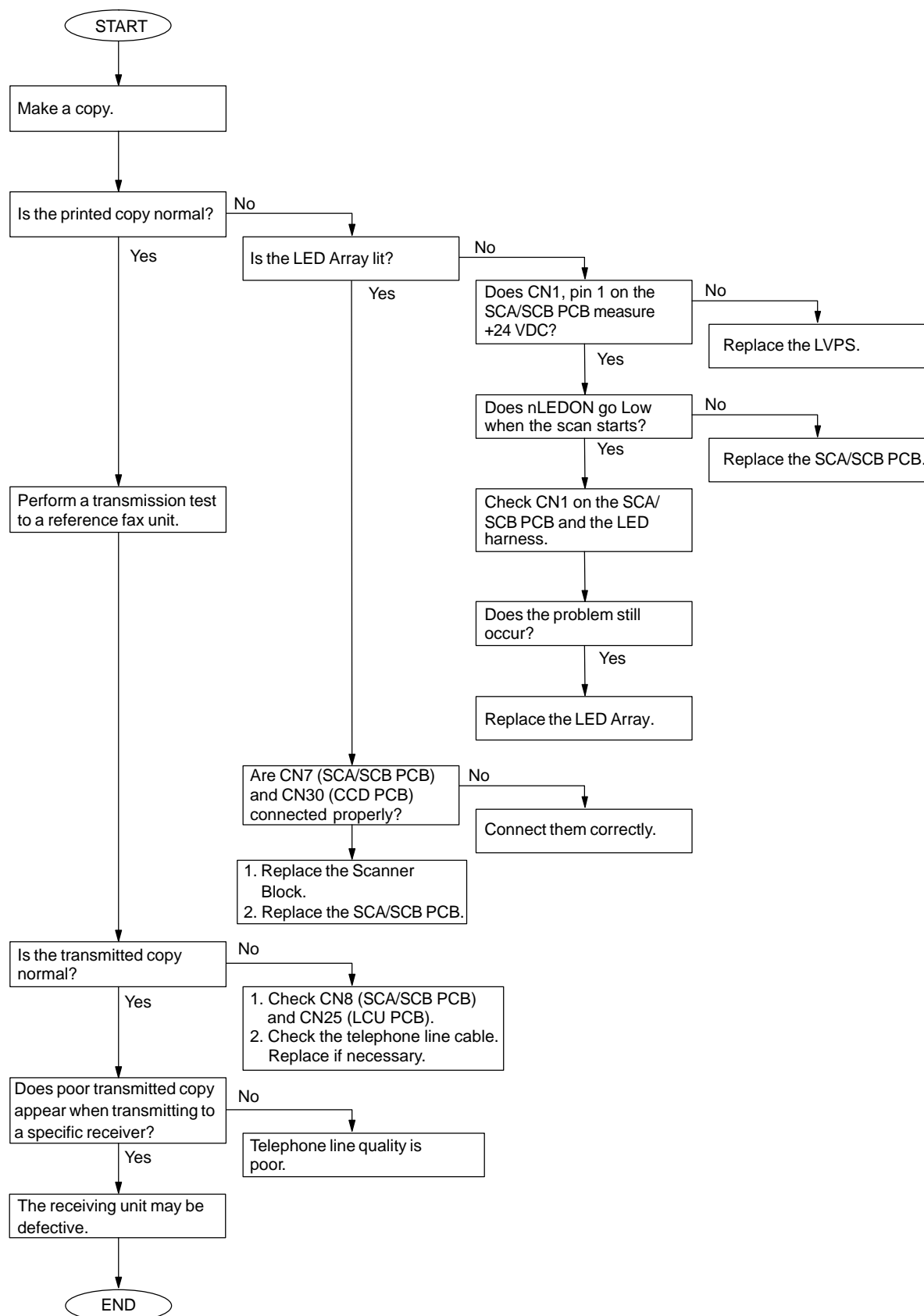
This section explains general troubleshooting procedures for the 400 series of Information Codes. These errors are primarily caused by poor telephone line quality (loss, noise, echo, etc.). This unit is furnished with Service Mode 1 to assist in troubleshooting line quality problems.

It is suggested that both the transmitting unit and receiving unit be adjusted. This section gives relevant parameters in Service Mode 1 for the transmitting and receiving sides. If no improvement is realized after the parameters are adjusted, it is recommended that the parameters be returned to the default settings.

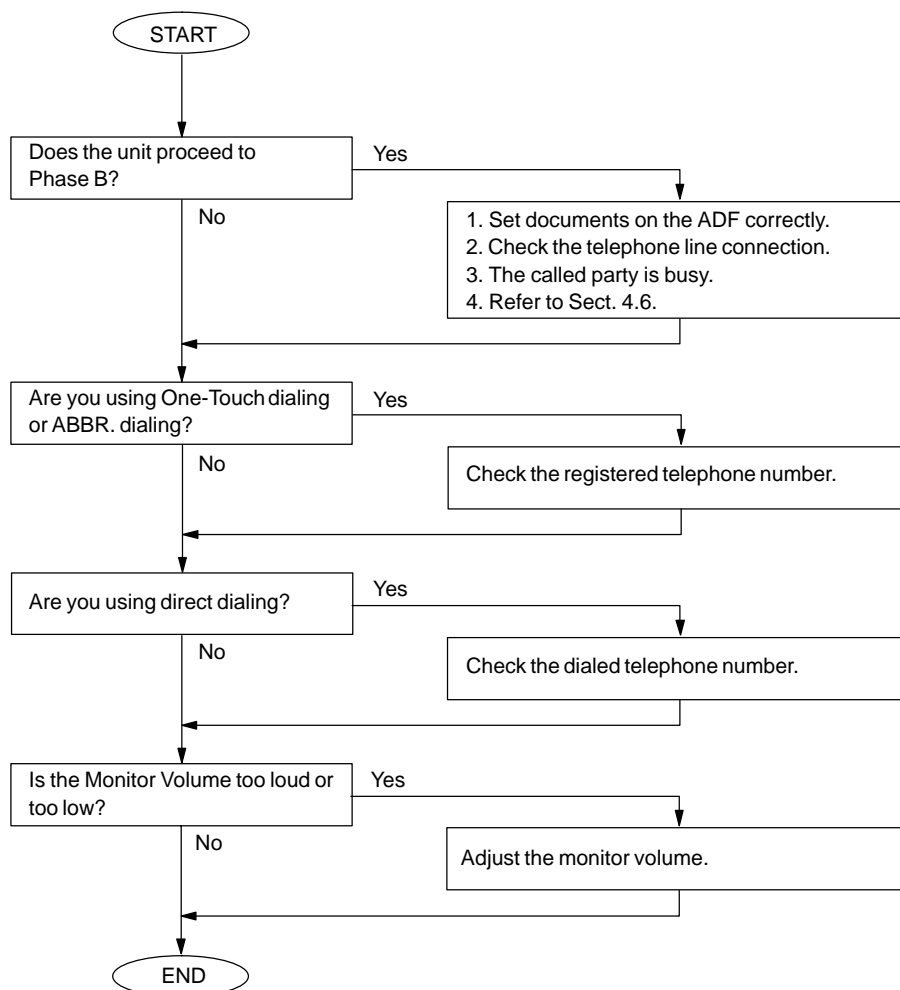
4.6.1 Communication Trouble



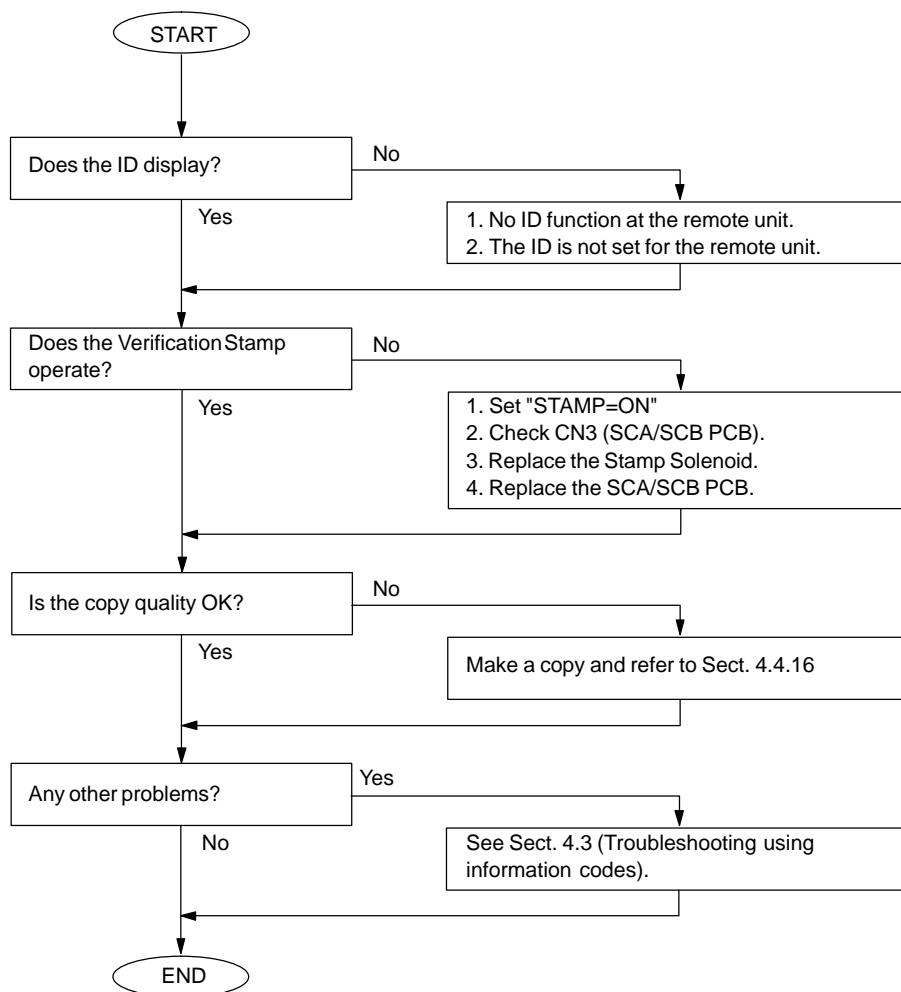
4.6.2 Poor Transmitted Copy Quality



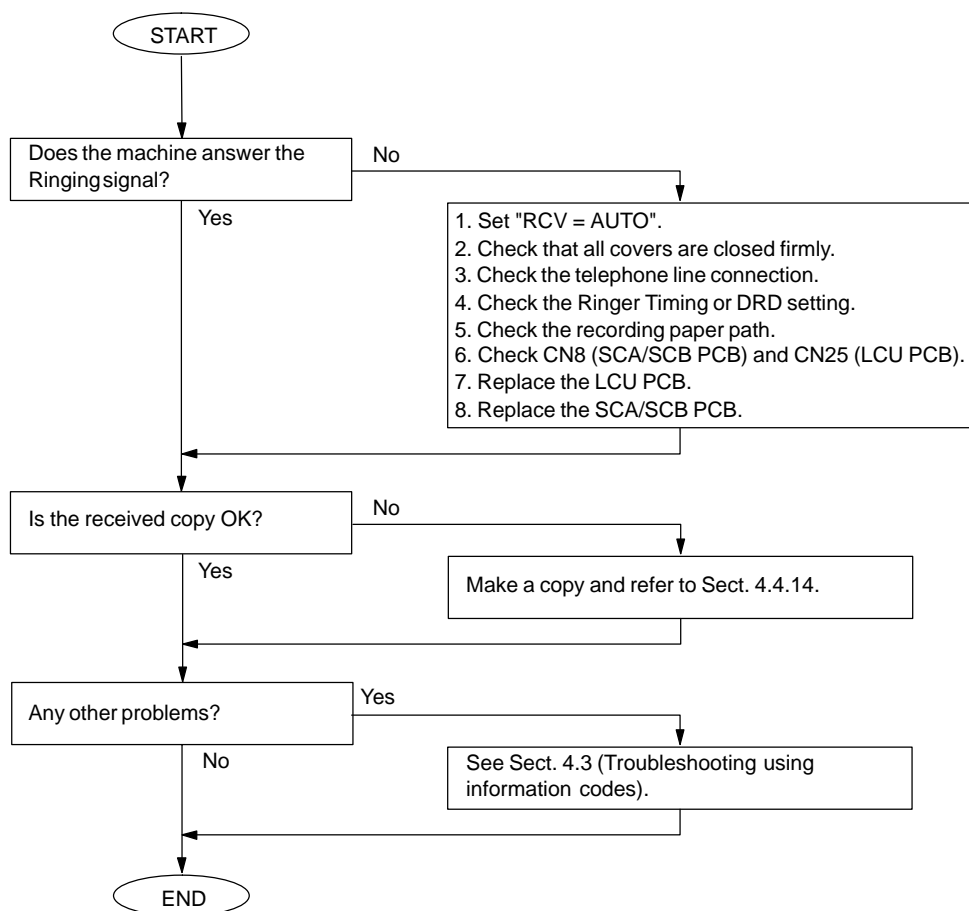
4.6.3 Dialing Problems



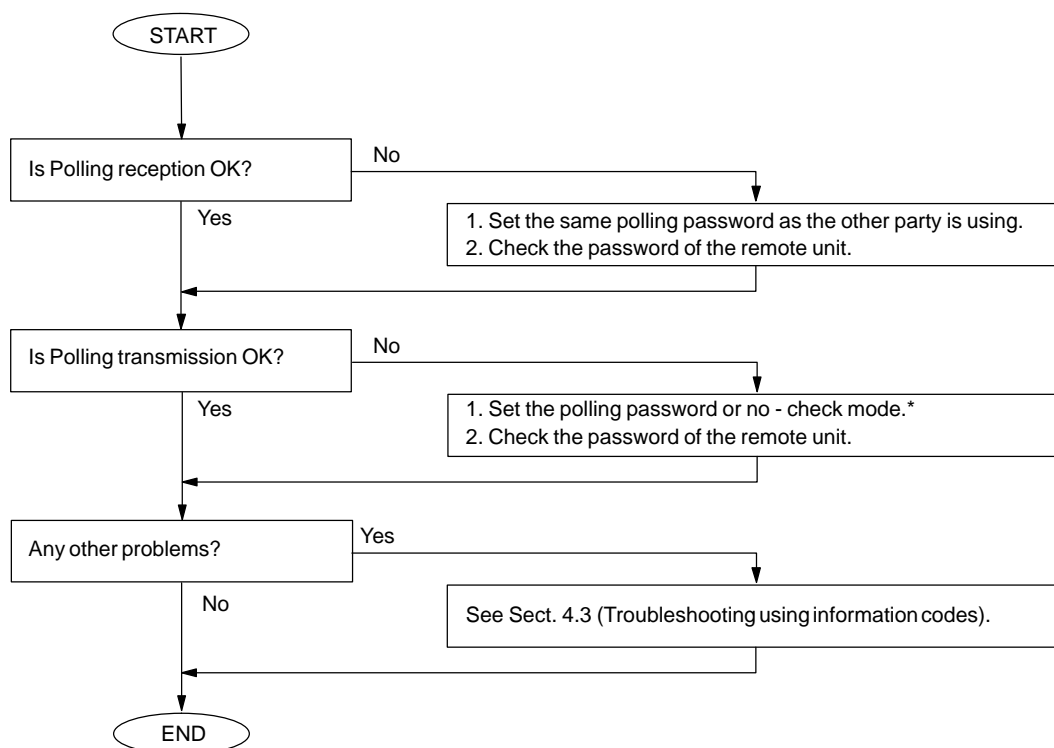
4.6.4 Transmission Problems



4.6.5 Reception Problems



4.6.6 Polling Problems



Note:

No-check Mode means that password is not set.

4.7 Information Code Table

Information Codes				
Code	Mode	Phase	Description of Problem	Cause
001	RCV COPY	C,D	Leading edge of the recording paper fails to reach the Timing Sensor. (1st cassette)	Recording paper jam. Timing Sensor abnormal.
002	RCV COPY	C,D	Leading edge of the recording paper fails to reach the Timing Sensor. (2nd cassette)	Recording paper jam. Timing Sensor abnormal.
007	RCV COPY	C,D	1. Leading edge of the recording paper fails to reach the Paper Exit Sensor. 2. Recording paper has not completely passed the Paper Exit Sensor.	Recording paper jam. Paper Exit Sensor abnormal.
008	RCV COPY	C,D	Paper Cassette was opened while the recording paper was feeding.	Recording paper jam.
010	RCV COPY	B,C	No recording paper.	No recording paper or paper is not set properly. No Paper Sensor is defective.
011	STANDBY	B,C	Paper Cassette is not installed properly.	
012	RCV	C,D	The length of the received document is over 2m.	
021	STANDBY RX COPY	B,C,D	Thermister is abnormal. Fuser Control is abnormal.	Defective LPC PCB. Defective Fuser Unit, LVPS.
026	-	-	The backup battery is getting weak.	
030	XMT	B	Read Point Sensor does not go ON within 10 seconds after the document starts feeding.	Document is not set properly. Defective Read Point Sensor.
031	XMT COPY	C	Transmitting document was longer than 2,000mm (or 78.7 in).	The document may jam. Defective Read Point Sensor.
033	-	-	Sub CPU system error.	Defective SCA/SCB PCB.
041	STANDBY RX COPY	B,C,D	Out of toner.	No toner. Defective Toner Sensor.
043	STANDBY RX COPY	B,C,D	Low toner.	Toner is getting low. Defective Toner Sensor.
045	STANDBY	-	No Toner Cartridge.	Toner cartridge has not been installed. Defective Toner Sensor (Cartridge Sensor).
051	RCV COPY	-	Printer Motor abnormal.	Connector not properly connected. Defective Printer Motor. Defective LPC PCB.
054	STANDBY RX COPY	-	HSYNC abnormal. Laser motor abnormal.	Defective Laser Unit.
055	STANDBY RX COPY	-	No response of LBP CPU on LPC.	Defective LPC PCB. Defective SCA/SCB PCB.
059	RCV COPY	C	Interface error occurred between SCA/SCB PCB and LPC PCB.	Defective LPC PCB. Defective SCA/SCB PCB.
060	-	A	Printer Cover is open.	Cover is not firmly closed. Connectors are not firmly connected.
061	-	A	ADF Door is open.	Cover is not firmly closed. Connectors are not firmly connected.
200	RCV	C	Decoding process is not completed at the end of phase C.	Defective SCA/SCB PCB.
212	XMT RCV	A-E	Interface error occurred between the CPU and modem.	Modem is defective. (SCA/SCB PCB) Software problem occurred. (SCA/SCB PCB)
301	XMT RCV		System fault.	Software problem occurred. (SCA/SCB PCB)
331	XMT	C	8-minutes timer error. (Germany only)	
400	XMT	B	T1 timer (35±5 sec) elapsed without detecting 300 bps signal.	Wrong number is dialed and the START button is pushed. Telephone line is disconnected while dialing. SCA/SCB PCB (Modem) or LCU PCB is defective. Receiver is defective. (It may only be transmitting CED)
401	XMT	B	DCN was returned from receiver while transmitter is waiting for CFR or FTT.	Your machine's ID Number is not programmed. Possible incompatibility or incorrect Password (Password Reception, Selective Receive). Mailbox is full.

Information Codes				
Code	Mode	Phase	Description of Problem	Cause
402	XMT	B	DCN was returned from receiver while transmitter is waiting for NSF/DIS.	Receiver working in non-CCITT mode only. (Possible incompatibility)
403	RCV(Polling)	B	Transmitter had no polling function.	"POLLED=ON" (polling XMT ready) is not set at the transmitter. Document to be transmitted is not placed at the transmitter.
404	XMT	B	Transmitter sent NSS (or DCS) followed by TCF three times, but the receiver did not respond. (CFR or FTT is usually returned)	Receiver is defective. (Modem, LCU PCB, etc.) SCA/SCB PCB or LCU PCB is defective. Receiver disconnects line during first NSS (or DCS) is transmitted.
405	XMT	B	Transmitter received FTT after it transmitted TCF at 2400bps. Received RTN after communicating at 2400 bps.	Line quality is poor. (TCF is damaged due to line noise) Receiver is defective. (Modem, LCU PCB, etc.) SCA/SCB PCB or LCU PCB is defective.
406	RCV(Pass- word Comm.)	B	XMT-Password mismatched. RCV-Password mismatched. Selective RCV incomplete.	XMT, RCV password does not match. Last 4 digits of TSI does not match with the last 4 digits of ONE-TOUCH, ABBR telephone number.
407	XMT	D	Transmitter received no response after it transmitted post message, such as EOP, MPS, EOM, etc...or received DCN.	Receiver is defective. (No paper, paper jamming, etc.) Receiver ceased receiving because of excessive error. (Line quality is poor) SCA/SCB PCB (Modem) or LCU PCB is defective.
408	XMT	D	Transmitter received RTN after it transmitted EOP, MPS, or EOM.	Receiver receives data with error. (Line quality is poor) Receiver is defective. (Modem, LCU, etc.) SCA/SCB PCB or LCU PCB are defective.
409	XMT	D	Transmitter receives PIN after it transmitted a post message, such as EOP, MPS, EOM, etc.	Receiver receives data with error due to poor line quality, and receiving operator requests voice contact. Receiver is defective. (Modem, LCU, etc.) SCA/SCB PCB or LCU PCB are defective.
410	RCV	D	Received DCN while waiting for post command. (EOP, MPS, EOM, etc.)	Interface or line is faulty. Transmitter is defective.
411	RCV(Polling)	B	Received DCN after transmitting NSC.	Transmitter is not ready for polling communication. Password does not match between transmitter and receiver.
412	G3 RX	B,D	No response within 12 seconds in NSS/DCS/ MPS wait state. (After transmitting FTT)	Transmitter is defective. SCA/SCB PCB is defective.
414	RCV(Polling)	B	No response received after transmitting 3rd NSC.	Password does not match between transmitter and receiver. Transmitter is defective. (No document, document jam, etc.)
415	XMT(Polling)	B	Remote side attempted to receive message from your machine in polling communication. Inform the remote side that your machine does not have the polling transmission feature.	
416	RCV	D	Receiver did not detect post command, such as EOP, MPS, EOM, etc.	Transmitter is defective. Line quality is poor. (RTC signal is distorted due to line noise) SCA/SCB PCB or LCU PCB are defective.
417	RCV	C	Receiver returned RTN in response to post message.	Line quality is poor. (There are excessive errors in received data) SCA/SCB PCB or LCU PCB are defective.
418	RCV	C	Receiver transmitted PIN in response to PRI-Q from transmitter. (Transmitting operator requests voice contact)	Line quality is poor. (There are excessive errors in received data) SCA/SCB PCB or LCU PCB are defective.
420	RCV	B	T1 timer (35 sec.) elapsed without detecting 300 bps signal.	There is wrong incoming call. (non-facsimile communication) Transmitter is defective. SCA/SCB PCB or LCU PCB is defective.
421	RCV	B	Busy Tone is detected after sending NSF Signal.	Remote station disconnects the line. Wrong number is dialed.
422	XMT	B	Content of NSF (or DIS) or NSC (or DTC) was invalid.	There is an incompatibility.
427	G3 RCV	B	DCN received to NSF/CSI/DIS transmitted.	The interface is incompatible.
433	XMT RCV	B,D	T.30 Protocol abnormal.	Defective remote station.

Information Codes				
Code	Mode	Phase	Description of Problem	Cause
434	XMT or RCV	B	CD (response from Modem) did not turn OFF within 180 sec. after receiver detected FLAG signal.	Remote unit is defective. SCA/SCB PCB or LCU PCB is defective.
436	G3 RX	C	DCN received after transmitting FTT.	Transmitter is defective or incompatible. Line quality is poor.
456	RCV	B	Received relay transfer request or confidential document to distribute to a end receiving station or all confidential mailboxes are used.	
457	RELAYXMT CONF.XMT/ POLL	B	Remote unit does not have Relayed XMT or Confidential Comm. capability.	
459	RCV	C	Failed training in Phase C.	Line quality is poor. (Training signal is distorted due to line noise) SCA/SCB PCB or LCU PCB are defective.
490	RCV	C	Sum of error line exceeded the limit (Parameter 70) by 64 lines.	Line quality is poor. SCA/SCB PCB or LCU PCB are defective.
494	RCV	C	Interval between two EOLs was more than 10 sec. when receiver received message data.	Transmitter is defective. Line quality is poor. (EOL is damaged due to line noise) SCA/SCB PCB or LCU PCB are defective.
495	XMT/RCV	C	During reception, CD turned OFF or continued ON for long time. During communication, lost loop - current.	Line is disconnected. Transmitter is defective. SCA/SCB PCB or LCU PCB are defective.
496	XMT	C	CS of modem is not able to turn ON.	SCA/SCB PCB is defective.
501	XMT/ RCV(V.34)	B	Remote unit does not have Modem compatibility.	
502	XMT/ RCV(V.34)	B,C,D	During reception, CD turned OFF or continued ON for long time. During communication, lost loop - current.	Line is disconnected. Transmitter is defective. SCA/SCB PCB or LCU PCB are defective.
503	XMT/ RCV(V.34)	B,C,D	CS of modem is not able to turn ON during training.	SCA/SCB PCB is defective. Line is disconnected.
504	RCV/V.34 (Polling)	B	Polling is rejected from the remote station.	No polling document is set.
505	XMT/V.34 (Polling)	B	Polling XMT is rejected.	No polling document is set.
540	XMT ECM	B	No response after transmitting 3rd CTC or DCN received.	Incompatible interface.
541	XMT ECM	D	No response after transmitting 3rd EOR or received DCN.	Line is faulty. LCU PCB abnormal.
542	XMT ECM	D	No response to the 3rd RR transmitted or received DCN.	Remote unit is abnormal.
543	XMT ECM	D	T5 timer (60 sec.) elapsed without MCF.	Remote unit is abnormal.
544	XMT ECM	D	Stopped Transmission after EOR Transmission.	Line is faulty. LCU PCB abnormal.
550	RCV ECM	C	Timer between frames in phase C has elapsed.	Defective remote station.
554	RCV ECM	D	Transmitted ERR after receiving EOR.	Faulty line.
555	RCV ECM	D	Transmitted PIN after receiving EOR.	Faulty line and Operator Call requested by RX side.
570	RCV	B	Password or machine code did not match during remote diagnostic communication.	
571	XMT	B	Remote unit did not have the remote diagnostic function.	
580	XMT	B	Sub-address transmission to a unit that has their DIS bit 49 (NSF bit 155) OFF.	Sub-address transmission to a unit that has no Sub-address function.
581	XMT	B	Sub-address Password transmission to a unit that has their DIS bit 50 (NSF bit 156) OFF.	Sub-address transmission to a unit that has no Sub-address function.
601	XMT		ADF Door was opened during ADF transmission.	
623	XMT	A	No document was in the ADF. (Built-in dialer engaged)	Operator removed the document from the ADF after dialing was completed. Document is not set properly in the ADF.
630	XMT or RCV(Polling)	B	Redial count over.	No dial tone detected. Sensor dial tone is not detected. (country dependent) Busy tone is detected. (country dependent) T1 timer (35±5 sec) elapsed without a signal from the receiver.
631	XMT	A	"STOP" button was pressed during Auto Dialing.	

Information Codes				
Code	Mode	Phase	Description of Problem	Cause
634	XMT		Redial count over with no response from the called station or busy tone was not detected. Note: If busy tone is not detected, the machine will only redial once.	
638	XMT		Power turned off with applicable data in memory or during communication.	Power cord unplugged. Power failure occurred.
800	Conf. XMT Conf. Polling Relay XMT		The machine was requested to relay a document but has no Relay Hub capability.	
814			The remote station does not have Relay XMT nor Confidential Communication capability.	
815			Mailbox is full.	
816			The received Polling Password did not match.	
825			Parameter settings of the initial sending station are not properly set.	
870	MEM XMT Multi-Copy		Memory overflow occurred while storing documents into memory for transmission. File register is full.	
880			Someone try to poll a Confidential Document whil your machine is storing a same Confidential Code Document.	
884			File Access Error.	

4.8 Diagnostic Codes

The 13-digit Diagnostic Code is provided for the service engineer to analyze how the communication was performed. The code is recorded on the Journal.

Journal Example

***** -JOURNAL- ***** DATE MAR-12-1999 ***** TIME 09:39*****										
NO.	COM	PAGES	FILE	DURATION	X/R	IDENTIFICATION	DATE	TIME	DIAGNOSTIC	
01	OK	001	129	00:00'42	XMT	123 456 789	MAR-12	01:55	C8649003C0000	
								1st digit		13th digit

-PANASONIC -										
***** - PANAFAX UF -585- ***** -12345678901234567890- *****										

1st Digit: Manufacturer Code

-: Not used/defined

Data	Definition			
	Manufacture Code			
0				
1	Casio			
2	Canon			
3	Sanyo			
4	Sharp			
5	Tamura			
6	Toshiba			
7	NEC			
8	Okii			
9	Hitachi			
A	Xerox			
B	Fujitsu			
C	Matsushita			
D	Mitsubishi			
E	Murata			
F	Ricoh			

2nd Digit

-: Not used/defined

Data	Definition			
	ID (TSI, CSI, CIG)	RTN	DCN	STOP Button
0	-	-	-	-
1	Received	-	-	-
2	-	Received	-	-
3	Received	Received	-	-
4	-	-	Received	-
5	Received	-	Received	-
6	-	Received	Received	-
7	Received	Received	Received	-
8	-	-	-	Pressed
9	Received	-	-	Pressed
A	-	Received	-	Pressed
B	Received	Received	-	Pressed
C	-	-	Received	Pressed
D	Received	-	Received	Pressed
E	-	Received	Received	Pressed
F	Received	Received	Received	Pressed

3rd Digit

:- Not used/defined

Data	Definition			
	Resolution	Paper Width		
0	-	A4		
1	S-Fine	A4		
2	400 x 400	A4		
3	300 x 300	A4		
4	-	-		
5	-	-		
6	-	-		
7	-	-		
8	-	-		
9	-	-		
A	-	-		
B	-	-		
C	-	-		
D	-	-		
E	-	-		
F	-	-		

4th Digit

:- Not used/defined

Data	Definition			
	Scanning Rate	Resolution		
0	20 ms/line	Std		
1	5 ms/line	Std		
2	10 ms/line	Std		
3	-	Std		
4	40 ms/line	Std		
5	-	Std		
6	-	Std		
7	0 ms/line	Std		
8	20 ms/line	Fine		
9	5 ms/line	Fine		
A	10 ms/line	Fine		
B	-	Fine		
C	40 ms/line	Fine		
D	-	Fine		
E	-	Fine		
F	0 ms/line	Fine		

5th Digit

:- Not used/defined

Data	Definition			
	Deferred Comm.	Dialing/RCV	Memory/Non-Memory	
0	-	Manual Communication	Non-Memory	
1	Used	Manual Communication	Non-Memory	
2	-	Auto Dialing	Non-Memory	
3	Used	Auto Dialing	Non-Memory	
4	-	Auto RCV	Non-Memory	
5	Used	Auto RCV	Non-Memory	
6	-	Remote RCV	Non-Memory	
7	Used	Remote RCV	Non-Memory	
8	-	Manual Communication	Memory	
9	Used	Manual Communication	Memory	
A	-	Auto Dialing	Memory	
B	Used	Auto Dialing	Memory	
C	-	Auto RCV	Memory	
D	Used	Auto RCV	Memory	
E	-	Remote RCV	Memory	
F	Used	Remote RCV	Memory	

6th Digit

-: Not used/defined

Data	Definition			
	Polling	XMT/RCV	Selective Comm.	Password Comm.
0	-	RCV	Off	Off
1	Yes	RCV	Off	Off
2	-	XMT	Off	Off
3	Yes	XMT	Off	Off
4	-	RCV	On	Off
5	Yes	RCV	On	Off
6	-	XMT	On	Off
7	Yes	XMT	On	Off
8	-	RCV	Off	On
9	Yes	RCV	Off	On
A	-	XMT	Off	On
B	Yes	XMT	Off	On
C	-	RCV	On	On
D	Yes	RCV	On	On
E	-	XMT	On	On
F	Yes	XMT	On	On

7th Digit

-: Not used/defined

Data	Definition			
	Sub-address Comm.	Confidential Comm.	Relayed Comm.	Turnaround Polling
0	-	-	-	-
1	Yes	-	-	-
2	-	Yes	-	-
3	Yes	Yes	-	-
4	-	-	Yes	-
5	Yes	-	Yes	-
6	-	Yes	Yes	-
7	Yes	Yes	Yes	-
8	-	-	-	Yes
9	Yes	-	-	Yes
A	-	Yes	-	Yes
B	Yes	Yes	-	Yes
C	-	-	Yes	Yes
D	Yes	-	Yes	Yes
E	-	Yes	Yes	Yes
F	Yes	Yes	Yes	Yes

8th Digit

-: Not used/defined

Data	Definition			
	Advanced Comm.	Cover Sheet XMT		
0	-	-		
1	Report XMT	-		
2	Check & Call	-		
3	-	-		
4	Memory Transfer	-		
5	-	-		
6	-	-		
7	-	-		
8	-	Yes		
9	Report XMT	Yes		
A	Check & Call	Yes		
B	-	Yes		
C	Memory Transfer	Yes		
D	-	Yes		
E	-	Yes		
F	-	Yes		

9th Digit

:- Not used/defined

Data	Definition			
	Short Protocol	Standard / Non-Standard		
0	-	Standard		
1	-	Standard		
2	-	Standard		
3	-	Standard		
4	-	Standard		
5	-	Standard		
6	-	Standard		
7	-	Standard		
8	-	Non-Standard		
9	B	Non-Standard		
A	-	Non-Standard		
B	D	Non-Standard		
C	-	Non-Standard		
D	-	Non-Standard		
E	-	Non-Standard		
F	-	Non-Standard		

10th Digit

:- Not used/defined

Data	Definition			
	Coding	ECM		
0	MH	-		
1	MR	-		
2	MMR	-		
3	-	-		
4	-	-		
5	-	-		
6	-	-		
7	-	-		
8	MH	Yes		
9	MR	Yes		
A	MMR	Yes		
B	-	-		
C	-	-		
D	-	-		
E	-	-		
F	-	-		

11th Digit

:- Not used/defined

Data	Definition			
	Symbol Rate (V.34)	V.34		
0	-	-		
1	-	-		
2	-	-		
3	-	-		
4	-	-		
5	-	-		
6	-	-		
7	-	-		
8	2400 sr	Yes		
9	-	-		
A	2800 sr	Yes		
B	3000 sr	Yes		
C	3200 sr	Yes		
D	3429 sr	Yes		
E	-	-		
F	-	-		

12th Digit

-. Not used/defined

Data	Definition			
	Modem Speed	Modem Speed (V.34)		
0	2400 bps	-		
1	4800 bps	2400 bps		
2	7200 bps	4800 bps		
3	9600 bps	7200 bps		
4	TC 7200 bps	9600 bps		
5	TC 9600 bps	12000 bps		
6	12000 bps	14400 bps		
7	14400 bps	16800 bps		
8	-	19200 bps		
9	-	21600 bps		
A	-	24000 bps		
B	-	26400 bps		
C	-	28800 bps		
D	-	31200 bps		
E	-	33600 bps		
F	-	-		

13th Digit

-. Not used/defined

Data	Definition			
	Line status			
0	-			
1	Private Line			
2	-			
3	-			
4	-			
5	-			
6	-			
7	-			
8	-			
9	-			
A	-			
B	-			
C	-			
D	-			
E	-			
F	-			

5 Service Modes

5.1 Service Mode Table

The following Service Modes are provided to assist you in setting operational functions of the unit and determining the condition of the unit.

No.	Service Mode	Description
1	Function Parameter Setting	Allows changes to the function parameters (the home position, etc...).
2	Not used	
3	Print Parameter List / Reports	Prints the Function Parameter List, Page Memory Test, Printer Report, All Document Files, Protocol Trace and Toner Order Form.
4	Modem Tests	Generates various binary tonal or DTMF signals, by the modem.
5	Diagnostic	Performs various hardware tests.
6	RAM Initialization	Initialize RAM and restore the default value of the function parameters.
7	LBP Service Mode	Changes the Printer Parameters (the home position, etc.).
8	Check & Call	Enters information for Service Alert Report, Maintenance Alert Report and Toner Order Form.
9	System Maintenance	Update the firmware, backup the parameter settings.

5.2 Service Mode 1 (Function Parameter Setting)

Use the following procedure to change the function parameters.

Step	Operation or Unit Condition	LCD Display
1	Standby	MAR-12-1999 15:00 00%
2	Press "FUNCTION" and then "7".	SET MODE (1-6) ENTER NO. OR V ^
3	Press "MONITOR" four times, then press "**".	SERVICE MODE ENTER NO. OR V ^
4	Press "1".	PARAMETER (000-199) ENTER PARAMETER #_
5	Enter the Function Parameter Number. Ex: Changing the "ALARM STATUS" -- Enter "001" and press [SET].	PARAMETER #001 ALARM STATUS?
6	Press "START".	ALARM STATUS:Timer 1:OFF 2:Tmr 3:CONST
7	Enter the new setting value. Ex: Enter "3" for Constant.	ALARM STATUS:Const. 1:OFF 2:Tmr 3:CONST
8	Press "START". The new value will be stored and the next parameter will be displayed.	PARAMETER #002 STOP COMM.JRNL?
9	Repeat steps 4 through 7 to change other Function Parameters or Press "STOP" twice to return to standby.	MAR-12-1999 15:00 00%

Note

The following buttons provide these functions in the service mode:

"START" : The new setting value is stored in the machine.

"V" : Scroll the function parameter number down.

"^" : Scroll the function parameter number up.

Function Parameter Table			
No.	Parameter (see Note 3)	Selections	Function
000	MON/TEL DIAL	1 = Monitor 2 = TEL/DIAL	Selects whether the machine starts to TX automatically during On-Hook dialing. (Monitor: Start to TX after pressing START) (TEL/DIAL: Start to TX automatically)
001	ALARM STATUS	1 = Off 2 = Timer (6 sec.) 3 = Constant	Selects the operation of the alarm status. OFF : Alarm is disabled. Timer : Alarm will shut off after 6 seconds. Constant : Alarm will not stop until "STOP" is pressed or the error is cleared/corrected.
002	STOP COMM. JRNL	1 = Off 2 = On	Selects whether the machine prompts to print the COMM. Journal when the printout condition is set to INC and STOP is pressed during communication.
003	CONTINUOUS POLL	1 = Off 2 = Stn (Tx only)	Selects whether the Continuous Polling feature is enabled. Stn: Place the document(s) on the ADF then press the Program Key [P4] to store or add the document(s) into a polled file. (See Note 4)
004	NUMERIC ID SET	1 = Off (will not accept) 2 = On (accepts)	Selects whether the machine accepts and allows to set or change the Numeric ID.
005	Not Used		
006	ID DISPLAY	1 = Number (Numeric ID) 2 = Chara (Character ID)	Selects the priority of displaying the ID.
007	JNL COLUMN	1 = Preset station name 2 = Received ID	Selects the contents of the ID to display on the Journal.
008	MONITOR	1 = Off 2 = On	Selects whether the Monitor is ON/OFF for monitoring fax signals. (FOR SERVICE USE ONLY)
009	DC LOOP	1 = Off (Normal) 2 = On (Off Hook)	Selects a false Off Hook state for back to back communication test.
010	TX LEVEL	00 = 0 dBm ~ 15 = -15 dBm	Selects the TX signal output level, 0 to -15 dBm in 1 dBm steps. (Refer to Chapter 4.3)
011	RX LEVEL	1 = -43 dBm 2 = -38 dBm 3 = -33 dBm 4 = -48 dBm	Selects the receiving sensitivity of -33/-38/-43/-48 dBm. (Refer to Chapter 4.3)
012	DTMF LEVEL	00 = 0 dBm ~ 15 = -15 dBm	Selects the DTMF output level, 0 to -15 dBm in 1 dBm steps.
013	G3 RX EQL	[UF-595] 1 = 0dB 2 = 4dB 3 = 8dB 4 = 12dB	Selects the cable equalizer for G3 reception mode. UF-595: 1:0dB 2:4dB 3:8dB 4:12dB UF-585: 1:Off 2:On (7.2 Km)
		[UF-585] 1 = Off 2 = On	
014	G3 TX EQL	[UF-595] 1 = 0dB 2 = 4dB 3 = 8dB 4 = 12dB	Selects the cable equalizer for G3 transmission mode. UF-595 : 1:0dB 2:4dB 3:8dB 4:12dB UF-585 : 1:Off 2:On (7.2 Km)
		[UF-585] 1 = Off 2 = On	
015 ~ 016	Not Used		

Function Parameter Table			
No.	Parameter (see Note 3)	Selections	Function
017	TX START	<ul style="list-style-type: none"> ● 2400 bps ● 4800 bps ● 7200 bps ● 9600 bps ● TC7200 bps ● TC9600 bps ● 12000 bps ● 14400 bps 	<p>Selects the transmission modem start speed, 14400/12000/TC9600/TC7200/9600/7200/4800/2400 bps.</p> <p>Note: This parameter is applicable only when communicating with regular G3 machines. When communicating with Super G3 (V.34) machines, use Parameter #32.</p>
018	RX START	<ul style="list-style-type: none"> ● 2400 bps ● 4800 bps ● 7200 bps ● 9600 bps ● TC7200 bps ● TC9600 bps ● 12000 bps ● 14400 bps 	<p>Selects the reception modem start speed, 14400/12000/TC9600/TC7200/9600/7200/4800/2400 bps.</p> <p>Note: This parameter is applicable only when communicating with regular G3 machines. When communicating with Super G3 (V.34) machines, use Parameter #33.</p>
019	ITU-T V.34 (UF-595 only)	<ul style="list-style-type: none"> 1 = Off 2 = On 3 = Select 	Selects whether the ITU-T V.34 is Off, On or Select. (Select: Select whether the ITU-T V.34 is Off or On, when entering One-Touch/Abbreviated Dialing Numbers or Manual Number Dialing.)
020	ITU-T ECM	<ul style="list-style-type: none"> 1 = Off (Invalid) 2 = On (Valid) 	Select the ECM mode.
021	EP TONE	<ul style="list-style-type: none"> 1 = Off (without EP Tone) 2 = On (with EP Tone) 	Selects the echo protect tone on V.29 mode, On (Add) or Off (Not add). (Used when Echo Suppression is disabled.)
022	SIGNAL. INTERVAL	<ul style="list-style-type: none"> 1 = 100 ms 2 = 200 ms 3 = 500 ms 	Selects the time interval between the receiving signal and the transmitting signal.
023	TCF CHECK	<ul style="list-style-type: none"> 1 = Normal (Short) 2 = Long 	Selects the TCF check interval Long/Short
024	CED FREQUENCY.	<ul style="list-style-type: none"> 1 = 1080 Hz (non CCITT) 2 = 2100 Hz 	Selects the CED frequency 2100/1080 Hz
025	COMM. START-UP	<ul style="list-style-type: none"> 1 = 1'st response 2 = 2'nd response 	Selects the communication start-up condition (XMT and Polling). (Used when Echo Suppression is disabled.)
026	NON-STANDARD	<ul style="list-style-type: none"> 1 = Off (Invalid) 2 = On (Valid) 	Selects own mode (Panafax mode).
027	SHORT PROTOCOL B	<ul style="list-style-type: none"> 1 = Off (Invalid) 2 = On (Valid) 	Selects the short protocol (TYPE B) mode.
028	SHORT PROTOCOL D (UF-595 only)	<ul style="list-style-type: none"> 1 = Off (Invalid) 2 = On (Valid) 	Selects the short protocol (TYPE D) mode.
029	REMOTE DIAGNOSTICS.	<ul style="list-style-type: none"> 1 = Off (will not accept) 2 = On (accepts) 	Selects whether the machine accepts the Remote Diagnostics from the service station.
030	CED & 300 bps	<ul style="list-style-type: none"> 1 = 75 ms 2 = 1 sec 	Selects the pause interval between the CED and the 300 bps signal.(Used when Echo Suppression is disabled.)
031	RTC = EOLx12	<ul style="list-style-type: none"> 1 = Off (EOLx6) 2 = On (EOLx12) 	Selects the RTC signal, EOLx6 or EOLx12.
032	V.34 TX START (UF-595 only)	2400-33600bps	Selects the transmission modem start speed in V.34 communication, 33600-2400bps.
033	V.34 RX START (UF-595 only)	2400-33600bps	Selects the receiving modem start speed in V.34 communication, 33600-2400bps.
034	V.34 TX Symbol Rate (UF-595 only)	2400-3429sr	Selects the transmission symbol rate for V.34, 3429/3200/3000/2800/2400 sr. Press "V" or "/" to select the symbol rate.
035	V.34 RX Symbol Rate (UF-595 only)	2400-3429sr	Selects the receiving symbol rate for V.34, 3429/3200/3000/2800/2400 sr. Press "V" or "/" to select the symbol rate.
036	Not Used		
037	PROTOCOL DISPLAY	<ul style="list-style-type: none"> 1 = Off (not displayed) 2 = On (displayed) 	Selects whether to display the modem speed during communication. (Press "V" or "/" to display)
038	Not used		
039	FLASH TIME	<ul style="list-style-type: none"> 5 = 50 ms ~ 100 = 1000 ms 	Selects the pause interval before activating the Flash key.
040	E/F TIME (For Germany, Austria and Switzerland only)	<ul style="list-style-type: none"> 5 = 50 ms ~ 100 = 1000 ms 	Selects the pause interval before activating the Flash key.

Function Parameter Table			
No.	Parameter (see Note 3)	Selections	Function
041	PAUSE TIME	1 = 1 sec. ~ 10 = 10 sec.	Selects the pause interval from 1 sec. ~ 10 sec. for dialing through a switchboard or for international calls.
042	Not used		
043	REDIAL INTERVAL	0 = no waiting ~ 15 = 15 minutes	Selects the redial interval from 0 to 15 minutes in 1 minute steps.
044	REDIAL COUNT	0 = no redial ~ 15 = 15 times	Selects the redial count from 0 to 15 times in 1 step intervals.
045	RING DETECT COUNT	1 = 1 ring ~ 9 = 9 rings	Selects the ring detection count from 1 to 9 rings in 1 ring step intervals.
046	ON-HOOK TIME	0 = 0 sec. ~ 90 = 90 sec.	Selects the on-hook time between sequential communication calls in 1 second step intervals.
047	RESPONSE WAIT	1 = 1 sec. ~ 90 = 90 sec.	Selects the waiting interval for the response after completing the dialing.
048 049	Not used		
050	RING DETECT MODE	1 = Normal 2 = Rough	Selects the quality of ringer detection. Use if the line signal is out of regulation, set to "Rough" so that the unit may detect the ringing signals.
051	Not used		
052	PULSE RATE	1 = 10 pps 2 = 20 pps	Selects the dial pulse rate 10/20 pps.
053 054	Not used		
055	BUSY TONE CHECK	1 = Off 2 = On	Selects whether to detect the Busy Tone.
056	DIAL TONE CHECK (Except for USA and Canada version)	1 = Off 2 = On	Selects whether to detect dial tone before dialing the telephone number.
057	DC LOOP CHECK (Except for USA and Canada version)	1 = Off (will not check) 2 = On (checks)	Selects whether the unit checks the DC Loop during communication.
058	COMM.JRNL +IMAGE	1: Off (without image) 2: On (with image)	Selects whether the machine prints the COMM. Journal with image.
059	CONFIDENTIAL RCV REPORT	1 = Off (does not print out) 2 = On (prints out)	Selects whether the machine prints the CONFIDENTIAL RCV REPORT.
060	VERSION	Displays the ROM version.	
061	TX/RX//PRT/CPY COUNTER	TX/RX/PRT/CPY	Displays the transmitted, received, total printed and copied document count.
062	PRINT COUNTER	1 = Off 2 = On	Selects whether to print in the Fax Parameter List, the counter information that is displayed in the Function Parameter No. 61.
063	Not used		
064	SILENT DETECTION TIME OUT	01 = 1 sec. ~ 60 = 60 sec.	Selects silent detection timeout time (TAM I/F).
065	SILENT INTEGRATION TIME	01 = 1 sec. ~ 10 = 10 sec.	Selects ring detection integration time (TAM I/F).
066	RING COUNT (TAM)	1 = 1 ring ~ 99 = 99 ring	Selects ring detection count 1 to 99 times in one step intervals on TAM I/F mode.
067	SELF-LEARNING	1 = A4 2 = LETTER	Selects the default paper size to be used when the Legal Size recording paper is replaced with either Letter/A4 size paper without setting the corresponding Recording Paper Size in the Fax Parameter No. 23.
068	NYSE FAX FORWARD (For USA and Canada only)	1 = Off 2 = On	Selects whether the machine will forward the incoming and outgoing faxes to a specified ABBR or One-Touch station.
069	NYSE LOCAL PRINT (For USA and Canada only)	1 = Incomplete 2 = On (Always)	Selects the printing condition for the incoming faxes after FAX Forwarding. INC. : Prints only if FAX Forwarding fails. ON : Always prints.

Function Parameter Table			
No.	Parameter (see Note 3)	Selections	Function
070	LINE ERROR	<ul style="list-style-type: none"> ● 128 lines ● 256 lines ● 512 lines ● 1024 lines ● 2048 lines ● Off (Unlimited) 	1. Selects the line disconnect condition during reception. If the number of line errors exceed this setting, the unit will disconnect the line. 2. Selects the transmit condition of RTP/PIP or RTN/PIN. (Available if No.73 ERROR DETECT is set to "LINES") (See Note 1)
071	TOTAL ERROR	1 = 5% 2 = 10% 3 = 15% 4 = 20%	Selects the transmit condition of RTP/PIP or RTN/PIN. (Available if No.73 ERROR DETECT is set to "RATE") (See Note 2)
072	CONTINUOUS ERROR	1 = Off (unlimited) 2 = 3 lines/STD 3 = 6 lines/STD 4 = 12 lines/STD	Selects the continuous total error criteria of Off/3/6 or 12 lines in Standard mode. If continuous total error exceeds this setting, the unit will transmit RTN/PIN. (Available if No.73 ERROR DETECT is set to "RATE")
073	ERROR DETECT	1 = Lines 2 = Rate	Selects the error detect condition Lines/Rate.
074	RTN RECEIVE	1 = Disconnect 2 = Continue	Selects whether to disconnect the phone line or continue when "RTN" is received.
075	CODING	1 = MH (MH only) 2 = MR (MH or MR) 3 = MMR (MH or MR or MMR)	Selects the coding scheme.
076	Not used		
077	RX JAM LENGTH	1 = Off (unlimited) 2 = 2 m 3 = 8 m	Selects the maximum length of a document that can be received per page before disconnecting the telephone line.
078	Not used		
079	Not used		
080	DOC TOP FEED	-5.0 mm ~ +5.0 mm	Adjusts the distance between the scanning sensor ON position and the scanning start position.
081	DOC END FEED	-5.0 mm ~ +5.0 mm	Adjusts the distance between the scanning sensor OFF position and the scanning end position.
082	JAM LENGTH	1 = 1 m 2 = 2 m 3 = 8 m 4 = Unlimited	Selects the maximum length of the document that can be scanned.
083	Not used		
084	LINE AS NO PAPER	1 = Ring (ring) 2 = Busy (keep line busy)	Selects whether to ring or send a busy tone to the remote station when the recording paper runs out or the unit cannot receive because of any trouble.
085	Not used		
086	Not used		
087	DARKER LEVEL	0 = Darkest Contrast	Selects the scanning contrast level. 0 ← → 15 Darkest ↔ Lightest
088	NORMAL LEVEL	~	
089	LIGHTER LEVEL	15 = Lightest Contrast	
090	Not used		
091	Not used		
092	SMOOTHING	1 = Off 2 = On	Selects whether the smoothing function is available.
093	Not used		
~			
129			
130	BUSY-ACK TIMING	1 = In Busy 2 = While Busy 3 = After Busy	Selecting the Printer Interface Busy-to-Ack timing variations.
131	CMD RCV GRD TIMER	1 min ~ 15 min	Selects the Guard Timer between the Commands (GDI).
132	PRT DATA TIMER	1 min ~ 15 min	Selects the Guard Timer for the Data Frame.
133	COLLATION (PRT)	1 = Off 2 = On 3 = Auto	Selects the Print Collation mode when activating the GDI Printer Driver. (Fax Parameter #65 is carried out when "3 = Auto" is selecting)

Function Parameter Table			
No.	Parameter (see Note 3)	Selections	Function
134	COLLATION (PC)	1 = Off 2 = On 3 = Auto	Selects the Print Collation mode when activating the CFP Protocol. (Fax Parameter #65 is carried out when "3 = Auto" is selecting)
135 ~ 199	Not used		

Note 1:

No. 070 LINE ERROR-Transmit condition of RTP/PIP or RTN/PIN

Signal	Setting					
	1:128	2:256	3:512	4:1024	5:2048	6:Off
MCF/PIP	0-31	0-63	0-127	0-255	0-511	Always
RTP/PIP	32-63	64-127	128-255	256-511	512-1023	-
RTN/PIN	64-127	128-255	256-511	512-1023	1024-2047	-

Note 2:

No. 071 TOTAL ERROR-Transmit condition of RTP/PIP or RTN/PIN

Signal	Setting			
	1:5%	2:10%	3:15%	4:20%
MCF/PIP	0-2	0-4	0-7	0-9
RTP/PIP	3-4	5-9	8-14	10-19
RTN/PIN	5-	10-	15-	20-

Note 3:

The default setting of parameters depends on the country's specifications or regulations. Print the Function Parameter List to confirm the default settings.

Note 4:

Continuous Polling (Station Mode)

This feature allows you to store or add documents into a polled file in memory.

To enable the Continuous Polling feature set Function Parameter No. 003 to "2:Station". The Program Key [P4] will be assigned with the "Store-4-Polling" name automatically and cannot be changed.

To prepare the document(s) to be polled, simply place the document(s) on the ADF and then press the Program Key [P4] to store or add the document(s) into a polled file.

(Note: If a regular polled file ([FUNCTION][3][2]) is stored in memory, the Program Key [P4] for Continuous Polling will not be accepted.)

5.3 Service Mode 3 (Printout of Lists, Reports and Test Results)

From this Service Mode you can print the Function Parameter List, Page Memory Test, Printer Report, All Document File, Protocol Trace and the Toner Order Form.

5.3.1 Function Parameter List

A list of all Function Parameters can be printed by the following procedure.

Step	Operation or Unit Condition	LCD Display
1	Standby	MAR-12-1999 15:00 00%
2	Press "FUNCTION" and then "7".	SET MODE (1-6) ENTER NO. OR V Λ
3	Press "MONITOR" four times, then press "**".	SERVICE MODE ENTER NO. OR V Λ
4	Press "3".	PRINTOUT (1-7) 1:FUNC. PARAM. LIST
5	Press "START".	* PRINTING * FUNC. PARAMETER LIST
6	After printing is completed, the unit returns to the display in step 3.	SERVICE MODE ENTER NO. OR V Λ
7	Press "STOP" to return to standby.	MAR-12-1999 15:00 00%

Function Parameter List (Sample)

***** -FUNCTION PARAMETER- ***** DATE MAR-12-1999 ***** TIME 12:07 *** P.01

000 MON/TEL DIAL:[Monitor] Monitor	050 RING DET MODE:[Normal] Normal
001 ALARM STATUS:[Timer] Timer	051 -----
002 STOP COMM.JRNL:[On] On	052 PULSE RATE:[10pps] 10pps
003 CONTINUOUS POLL:[Off] Off	053 -----
004 NUMERIC ID SET:[On] On	054 -----
005 -----	055 BUSY TONE CHECK:[On] On
006 ID DISPLAY:[Chara] Chara	056 -----
007 JNL COLUMN:[Station] Station	057 -----
008 MONITOR:[Off] Off	058 COMM. JRNL +IMAGE:[Off] Off
009 DC LOOP:[Off] Off	059 CONF.RCV REPORT:[On] On
010 TX LEVEL:[-9dBm] -9dBm	060 VERSION: UF-595 AAV10000AU
011 RX LEVEL:[-43dBm] -43dBm	061 TX/RX/PRT/CPY:000050/000058/000074/000001
012 DTMF LEVEL:[-5dBm] -5dBm	062 PRINT COUNTER:[Off] Off
013 G3 RX EQL:[Off] Off	063 -----
014 G3 TX EQL:[Off] Off	064 SILENT DET.T.OUT:[60] 60
015 -----	065 SILENT INT. TIME:[5sec] 5sec
016 -----	066 RING COUNT(TAM):[5] 5
017 TX START:[14400bps] 14400bps	067 SELF-LEARNING:[Letter] Letter
018 RX START:[14400bps] 14400bps	068 -----
019 ITU-T V34:[On] On	069 -----
020 ITU-T ECM:[On] On	070 LINE ERROR:[128] 128
021 EP TONE:[Off] Off	071 TOTAL ERROR:[10] 10
022 SIG. INTERVAL:[500ms] 500ms	072 CONTI. ERROR:[Off] Off
023 TCF CHECK:[Normal] Normal	073 ERROR DETECT:[Rate] Rate
024 CED FREQ.: [2100Hz] 2100Hz	074 RTN RECEIVE:[Discon] Discon
025 COMM. START-UP:[1'st] 1'st	075 MH/MR/MMR:[MMR] MMR
026 NON-STANDARD:[On] On	076 -----
027 SHORT PROTOCOL B:[On] On	077 RX JAM LENGTH:[Off] Off
028 SHORT PROTOCOL D:[On] On	078 -----
029 REMOTE DIAG.: [On] On	079 -----
030 CED & 300bps:[75ms] 75ms	080 -----
031 RTC=EQL x 12:[Off] Off	081 DOC END FEED:[0.0mm] 0.0mm
032 V34 TX START:[33600bps] 33600bps	082 JAM LENGTH:[2 m] 2 m
033 V34 RX START:[33600bps] 33600bps	083 -----
034 V34 TX SR:[3429sr] 3429sr	084 LINE AS NOPAPER:[Ring] Ring
035 V34 RX SR:[3429sr] 3429sr	085 -----
036 -----	086 -----
037 PROTOCOL DISPLAY:[Off] Off	087 DARKER LEVEL:[4] 4
038 -----	088 NORMAL LEVEL:[8] 8
039 FLASH TIME:[50] 50ms	089 LIGHTER LEVEL:[12] 12
040 -----	090 -----
041 PAUSE TIME:[3] 3 sec	091 -----
042 -----	092 SMOOTHING:[On] On
043 REDIAL INTERVAL:[3] 3 min	093 -----
044 REDIAL COUNT:[5] 5	094 -----
045 RING DET. COUNT:[2] 2	095 -----
046 ON-HOOK TIME:[5] 5 sec	096 -----
047 RESPONSE WAIT:[60] 60 sec	097 -----
048 -----	098 -----
049 -----	099 -----

Note:The power must be reset for the new parameter settings to take effect.

- PANASONIC -

***** - PANAFAX UF-595 - ***** - 123456789012345678 -*****

Note:

1. [] - Factory Default
2. The contents of the Function Parameter List may vary depending on the country's regulations.
3. "*" mark will be shown on the left side of number when setting was changed from default.

5.3.2 Printer Report

All printer errors are logged on the Printer Report which can be printed by the following procedure.

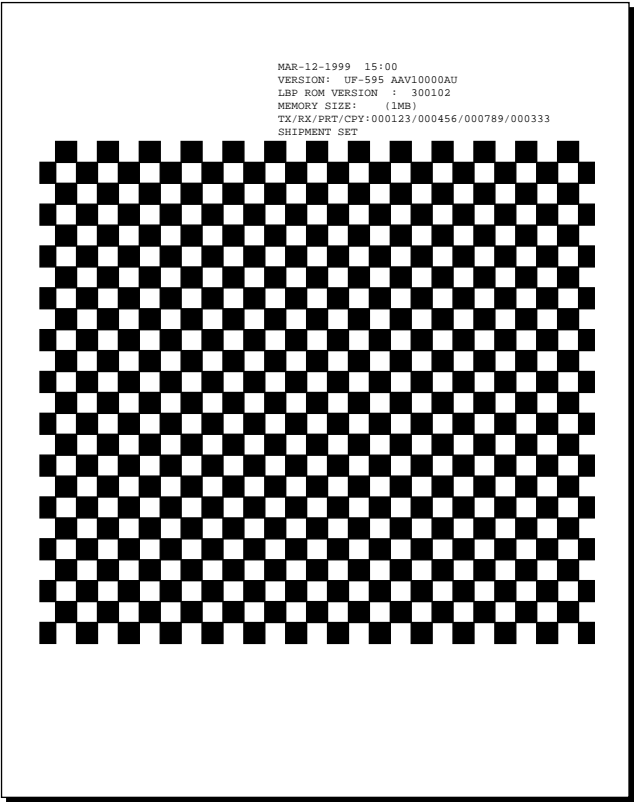
Step	Operation or Unit Condition	LCD Display
1	Standby	MAR-12-1999 15:00 00%
2	Press "FUNCTION" and then "7".	SET MODE (1-6) ENTER NO. OR V Λ
3	Press "MONITOR" four times, then press "8".	SERVICE MODE ENTER NO. OR V Λ
4	Press "3".	PRINTOUT (1-7) 1:FUNC. PARAM. LIST
5	Press "4" and "START".	* PRINTING * PRINTER REPORT
6	After printing is completed, the unit returns to the display in step 3.	SERVICE MODE ENTER NO. OR V Λ
7	Press "STOP" to return to standby.	MAR-12-1999 15:00 00%

*****-PRINTER REPORT-***** DATE MAR-12-1999 ***** TIME 19:02*****	
LAST PRINT ERROR	: MAR-12 15:38 NO. 001-12
CUSTOMER ID	: 1234567890123456
FAX ROM VERSION	: UF-595 AAV10000AU
LBP ROM VERSION	: 300102
TRANSMIT COUNTER	: 000475
RECEIVE COUNTER	: 000398
COPY COUNTER	: 001083
PRINT COUNTER	: 001575
PRINT ERROR	: 1.MAR-11-1999 15:38 NO.001-12 2.MAR-10-1999 10:48 NO.001-11 3.MAR-09-1999 15:23 NO.004-36
***** - PANAFAX - ***** - 12345678901234567890 - *****	

5.3.3 Page Memory Test

A test pattern prints out for cheking the page memory (IC6 on the SCB PCB/ IC6 and 7 on the SCA PCB) and printer mechanism using the following procedure.

Step	Operation or Unit Condition	LCD Display
1	Standby	<div>MAR-12-1999 15:00 00%</div>
2	Press "FUNCTION" and then "7".	<div>SET MODE (1-6) ENTER NO. OR V ^</div>
3	Press "MONITOR" four times, then press "8".	<div>SERVICE MODE ENTER NO. OR V ^</div>
4	Press "3".	<div>PRINTOUT (1-7) 1:FUNC. PARAM. LIST</div>
5	Press "3" and "START".	<div>* PRINTING * PAGE MEMORY TEST</div>
6	After printing is completed, the unit returns to the display in step 3.	<div>SERVICE MODE ENTER NO. OR V ^</div>
7	Press "STOP" to return to standby.	<div>MAR-12-1999 15:00 00%</div>



1. Printer Error Code Table

Error Code	Description of Problems	Cause
00	No problem detected	
10	The Timing Sensor turned OFF before a certain period of time.	1. Recording Paper Jam. 2. Timing Sensor defective 3. Incorrect paper size setting.
11	Timing Sensor did not turn ON within a certain period of time. (Original Cassette Feeder)	1. Recording Paper misfeeding, Paper Feed Roller defective. 2. Drive Clutch defective. 3. Timing Sensor defective.
12	Timing Sensor did not turn ON within a certain period of time. (250 sheet Optional Cassette Feeder)	1. Recording Paper misfeeding, Paper Feed Roller defective. 2. Drive Clutch defective. 3. Timing Sensor defective.
14	Timing Sensor did not turn OFF within a certain period of time.	1. Recording Paper Jam. 2. Timing Sensor defective 3. Incorrect paper size setting.
15	Paper Eject Sensor did not turn ON within a certain period of time.	1. Recording Paper Jam. 2. Paper Exit Sensor defective.
16	Paper Eject Sensor did not turn OFF within a certain period of time.	1. Recording Paper Jam. 2. Paper Exit Sensor defective.
17	Timing Sensor detected paper while initializing the unit.	1. Recording Paper jammed in the unit. 2. Timing Sensor defective.
18	Paper Exit Sensor detected paper while initializing the unit.	1. Recording Paper jammed in the unit. 2. Paper Exit Sensor defective.
22	The temperature of the Fuser Roller remained low even after the circuit was activated.	1. Fuser Unit defective. 2. LPC PCB defective. 3. LVPS defective.
23	Abnormally high Fuser Roller temperature after the circuit was de-activated.	1. Fuser Unit defective. 2. LPC PCB defective. 3. LVPS defective.
24	The temperature of the Fuser Roller was not controlled within a certain margin.	1. Fuser Unit defective. 2. LPC PCB defective. 3. LVPS defective.
25	Thermistor open.	1. Thermistor defective (Fuser Unit). 2. LPC PCB defective.
26	Thermistor detected temperature over 200°C.	1. Thermistor defective (Fuser Unit). 2. LPC PCB defective. 3. LVPS defective.
31	The Tetragon Motor did not reach a constant speed of 7018 rpm (400dpi)/10762 rpm (600dpi) within a certain period of time.	1. LSU defective.
32	The Tetragon Motor did not maintain a constant speed of 7018 rpm (400dpi)/10762 rpm (600dpi).	1. LSU defective.
36	HSYNC signal abnormal.	1. LSU defective. 2. LPC PCB defective.
54	A/D Converter error.	1. LPC PCB defective.
61	Unit detected "No Toner Cartridge".	1. Toner Cartridge not installed. 2. Toner Sensor defective.
63	Unit detected "Printer Door Open".	1. Printer door is not closed. 2. ILS PCB defective.
64	Unit detected "No Cassette".	1. Cassette not installed or partially open. 2. Cassette Sensor defective.
65	Unit detected "Out of Paper".	1. Cassette(s) ran out of receiving paper. 2. Paper Detect Sensor defective.
81	No response from LP controller.	1. LPC PCB defective
82	Illegal response from LP controller	1. LPC PCB defective

Note:

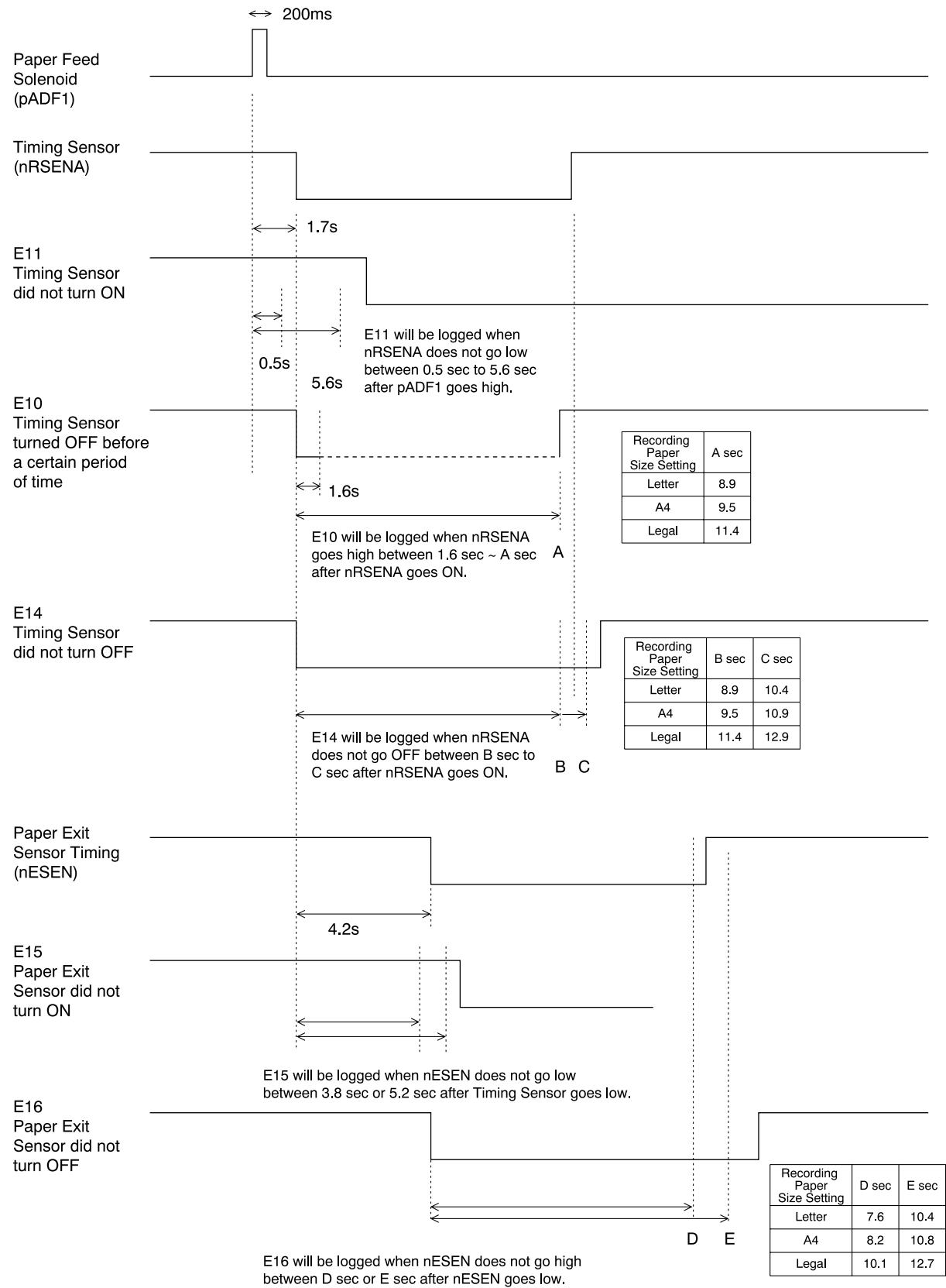
If an 021 series Error Code occurs, 021-25 (Thermistor Open) or 021-26 (Thermistor detected temperature over 200 °C), a pre-programmed recovery safety software is activated to protect the unit and the service personnel during abnormal increase in temperature.

Once activated, this program is downloaded into the LPC PC Board's SRAM, disabling the Fuser Lamp and preventing it from turning ON again.

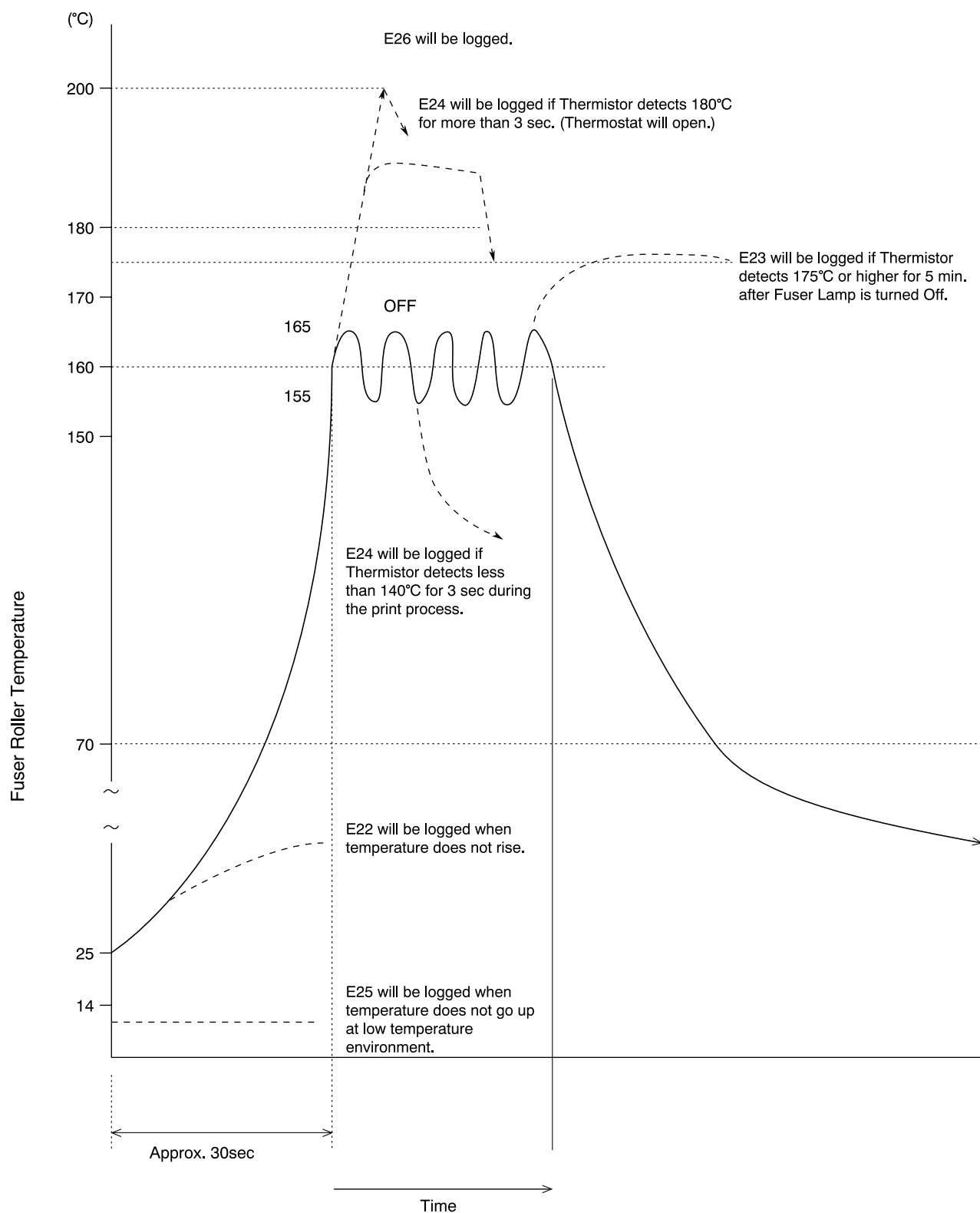
In order to reset this circuit, please follow the procedure below.

- 1) Reset the LBP Fuser by using Service Mode 7-1-2 (Section 5.7) and Power OFF/ON.
- 2) Replace the Thermistor or Fuser Unit. If the problem persists.
- 3) Replace the LPC PCB.

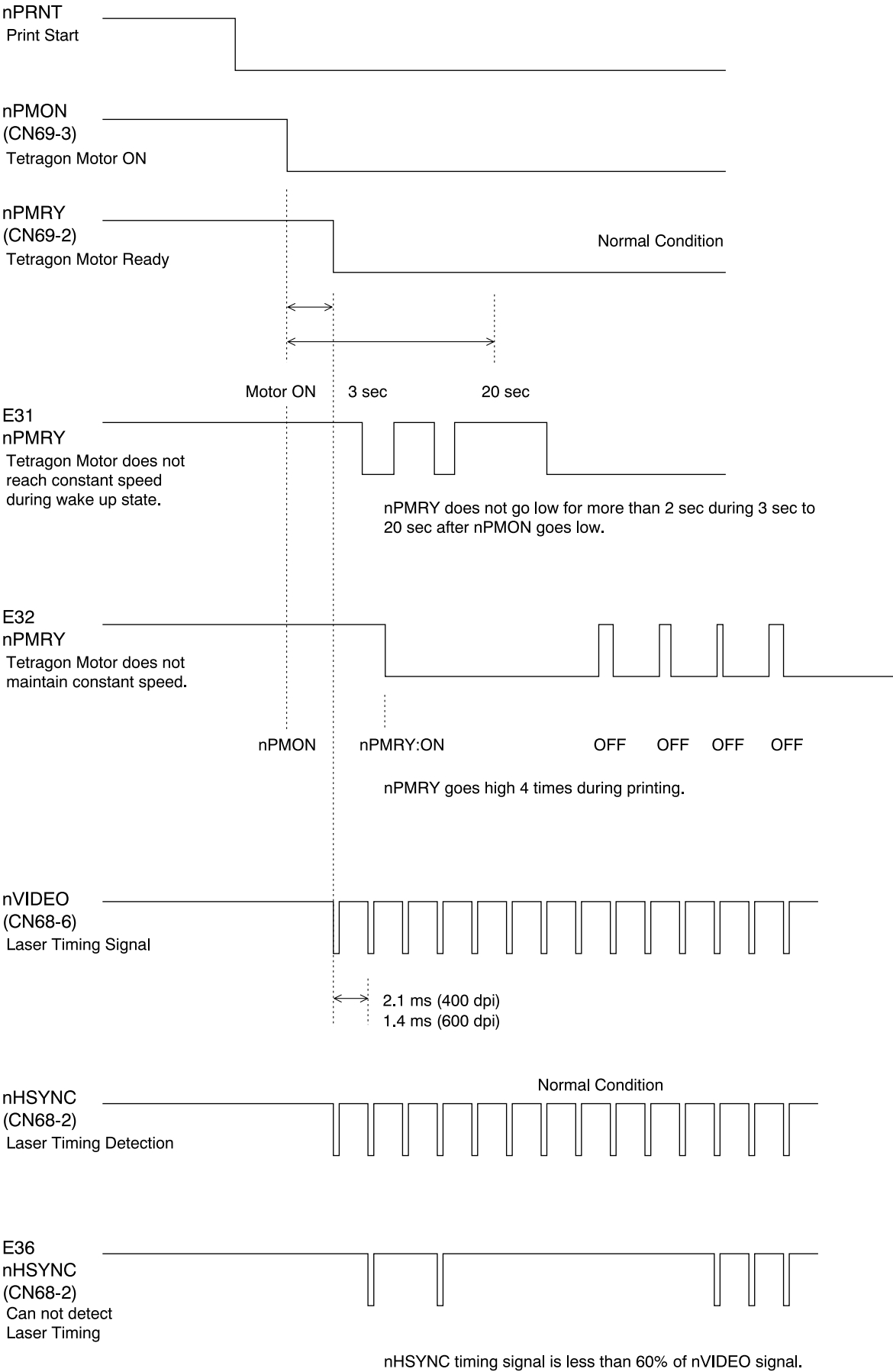
2. Printer Error Detail Explanation
Recording Paper Jam Detection



Fuser Error Detection

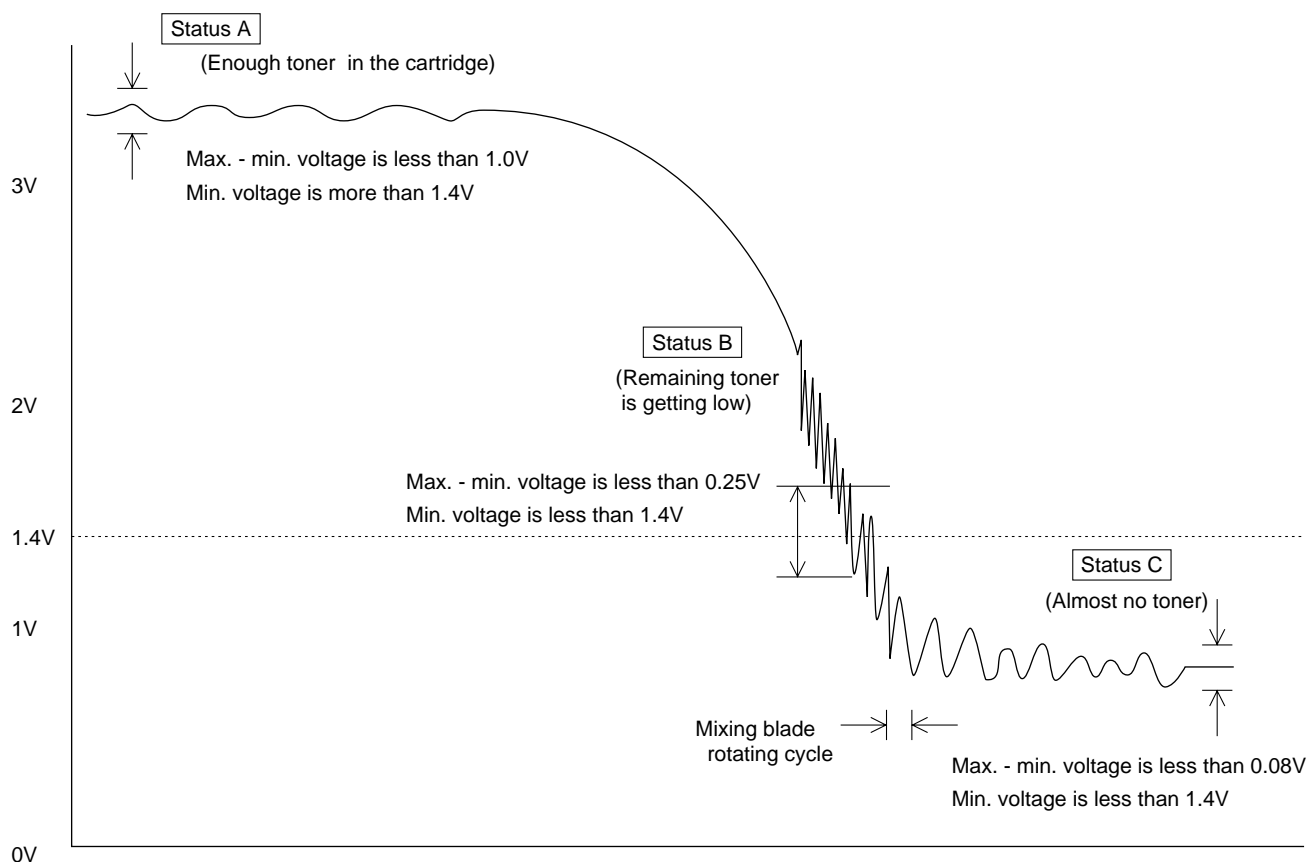


LSU Error Detection



Out of Toner Detection

Toner Sensor Output Signal



Toner Sensor output may change when the mixing blade passes above the Toner Sensor. Therefore the output signal has a max. voltage and min. voltage during mixing blade rotation cycle (4.6 sec).

E043

If the unit detects Status B 10 times during printing, the machine recognizes that the remaining toner is low and the display shows "REPLACE TONER CARTRIDGE".

E041

After detecting E043 and the LBP Print Available Counter Value reaches "0", the unit logs E041 (OUT OF TONER).

E45

If the unit detects Status C when power is On, the unit logs E045 and displays "NO CARTRIDGE". The unit will recover when detecting Status A after a new toner cartridge is installed.

5.3.4 Print All Document Files

Prints all the document files from the Flash Memory.

(This function will be available as a running change in the future)

Step	Operation or Unit Condition	LCD Display
1	Standby	MAR-12-1999 15:00 00%
2	Press "FUNCTION" and then "7".	SET MODE (1-6) ENTER NO. OR V ^
3	Press "MONITOR" four times, then press "8".	SERVICE MODE ENTER NO. OR V ^
4	Press "3".	PRINTOUT (1-7) 1:FUNC. PARAM. LIST
5	Press "5" and "START".	* PRINTING * ALL DOCUMENT FILES
6	After printing is completed, the unit returns to the display in step 3.	SERVICE MODE ENTER NO. OR V ^
7	Press "STOP" to return to standby.	MAR-12-1999 15:00 00%

5.3.5 Protocol Trace

Prints a Protocol Trace Report for the previous communication.

Step	Operation or Unit Condition	LCD Display
1	Standby	MAR-12-1999 15:00 00%
2	Press "FUNCTION" and then "7".	SET MODE (1-6) ENTER NO. OR V Λ
3	Press "MONITOR" four times, then press "**".	SERVICE MODE ENTER NO. OR V Λ
4	Press "3".	PRINTOUT (1-7) 1:FUNC. PARAM. LIST
5	Press "6" and "START".	* PRINTING * PROTOCOL TRACE
6	After printing is completed, the unit returns to the display in step 3.	SERVICE MODE ENTER NO. OR V Λ
7	Press "STOP" to return to standby.	MAR-12-1999 15:00 00%

***** PROTOCOL LOG REPORT ***** DATE MAR-12-1999 ***** TIME 16:56 ***P.01	
STATUS	: OK
MODE	: ECM-TX (STANDARD)
SPEED	: 9600bps 00MS/L
REMOTE CAPA.	: DIS 00 CE 89 C4 80 12
LOCAL CAPA.	: TSI 2B 20 20 20 38 37 2B 2B 2B 2B 39 38 36 36 35 34 37 38 38 30 DCS 00 C6 F8 44
COMMAND LOG.	
REMOTE	: NSF CSI DIS CFR PIX PPS-BOP
LOCAL	: TSI DCS

REMOTE	: MCF
LOCAL	: DCN
-PANASONIC-	
***** -PANAFAX UF-595- *****-12345678901234567890-*****	

5.3.6 Toner Cartridge Order Form

The Toner Cartridge Order Form can be printed out manually by the following procedure.

Step	Operation or Unit Condition	LCD Display
1	Standby	MAR-12-1999 15:00 00%
2	Press "FUNCTION" and then "7".	SET MODE (1-6) ENTER NO. OR V ^
3	Press "MONITOR" four times, then press "8".	SERVICE MODE ENTER NO. OR V ^
4	Press "3".	PRINTOUT (1-7) 1:FUNC. PARAM. LIST
5	Press "7" and "START".	* PRINTING * TONER ORDER FORM
6	After printing is completed, the unit returns to the display in step 3.	SERVICE MODE ENTER NO. OR V ^
7	Press "STOP" to return to standby.	MAR-12-1999 15:00 00%

```

*****
>  TONER CARTRIDGE ORDER FORM  <
*****

**** The toner supply in your facsimile machine is running low **** (1)
      To order a replacement Cartridge from your Authorized Dealer

                Panafax Corp.(2)

      by Phone:  1 201 111 5555 (3)
      by Fax:    1 201 111 4444 (4)

                Thank you for your order.

                Customer Name and Address
                =====

Ship to:_____      Bill to:_____
_____
_____

Attention:_____      Attention:_____
Phone No.:_____      Phone No.:_____
Customer ID: ABC COMPANY (5)      P.O. No.(if required):_____
Toner Cartridge:    UG-3350 (6)      Serial No.:_____

                Quantity Required:

                [ ]

_____ / /
Print your name and title      Signature & Date

```

Explanation of Contents

- | | |
|-------------------------------|---|
| (1) Low Toner Message (Fixed) | "The toner supply in your facsimile machine is running low" |
| (2) Dealer Name | Up to 25 digits |
| (3) Toner Order Tel # | Up to 36 digits |
| (4) Toner Order Fax # | Up to 36 digits |
| (5) Customer ID | Up to 16 characters (User Identification Code) |
| (6) Toner Cartridge No. | UG-3350 |

5.4 Service Mode 4 (Modem Test)

5.4.1 Binary Signal

This Service Mode is used to check the binary signal output. Signals can be output to the line using the following procedure.

Step	Operation or Unit Condition	LCD Display
1	Standby	<div>MAR-12-1999 15:00 00%</div>
2	Press "FUNCTION" and then "7".	<div>SET MODE (1-6) ENTER NO. OR V ^</div>
3	Press "MONITOR" four times, then press "**".	<div>SERVICE MODE ENTER NO. OR V ^</div>
4	Press "4".	<div>MODEM TEST (1-5) 1:SIGNAL TEST</div>
5	Press "START".	<div>SIGNAL TEST IDLE (ENTER 1-9)</div>
6	Enter the signal number (1-9) to select the binary signal.	<div>SIGNAL TEST 300bps</div>
7	Press "CLEAR" to end the signal generation. To select another signal, repeat step 6.	<div>SIGNAL TEST IDLE (ENTER 1-9)</div>
8	Press "STOP" twice to return to standby.	<div>MAR-12-1999 15:00 00%</div>

Binary Signal Table

Number	Signals
1	V21 300bps
2	V27ter 2400bps
3	V27ter 4800bps
4	V29 7200bps
5	V29 9600bps
6	V17 TC7200bps
7	V17 TC9600bps
8	V33 12000bps
9	V33 14400bps

5.4.2 Tonal Signal

This Service Mode is used to check the tonal signal output. Signals can be output to the line using the following procedure.

Step	Operation or Unit Condition	LCD Display
1	Standby	MAR-12-1999 15:00 00%
2	Press "FUNCTION" and then "7".	SET MODE (1-6) ENTER NO. OR V Λ
3	Press "MONITOR" four times, then press "**".	SERVICE MODE ENTER NO. OR V Λ
4	Press "4".	MODEM TEST (1-5) 1: SIGNAL TEST
5	Press "2" and "START".	TONAL TEST IDLE (ENTER 1-7)
6	Enter the signal number (1-7) to select the binary signal.	TONAL TEST 1080Hz
7	Press "CLEAR" to end the signal generation. To select another signal, repeat step 6.	TONAL TEST IDLE (ENTER 1-7)
8	Press "STOP" twice to return to standby.	MAR-12-1999 15:00 00%

Tonal Signal Table

Number	Signals
1	462 Hz
2	1080 Hz
3	1100 Hz
4	1300 Hz
5	1650 Hz
6	1850 Hz
7	2100 Hz

5.4.3 DTMF Signal

This Service Mode is used to check the DTMF (Dual Tone Multi Frequency) signal output. The DTMF signal can be generated using the following procedure.

Step	Operation or Unit Condition	LCD Display
1	Standby	MAR-12-1999 15:00 00%
2	Press "FUNCTION" and then "7".	SET MODE (1-6) ENTER NO. OR V ^
3	Press "MONITOR" four times, then press "8".	SERVICE MODE ENTER NO. OR V ^
4	Press "4".	MODEM TEST (1-5) 1: SIGNAL TEST
5	Press "3" and "START".	DTMF TEST (1-2) 1. SINGLE
6a	Press "START" for DTMF Single Tone Generation.	SINGLE TONE ENTER (1-8)
7a	Enter the signal number (1-8) to select the DTMF signal.	SINGLE TONE 697Hz
6b	Press "2" and "START" for Dual Tone Generation.	DUAL TONE ENTER (0-#)
7b	Enter the signal number (0-#) to select the DTMF Dual tone.	DUAL TONE (0)
8	Press "CLEAR" to end the signal generation. To select another signal, repeat step 7a or 7b.	SINGLE TONE ENTER (1-8)
9	Press "STOP" twice to return to standby.	MAR-12-1999 15:00 00%

DTMF Single Tone Table

Number	DTMF Signal Tones
1	697 Hz
2	770 Hz
3	852 Hz
4	941 Hz
5	1209 Hz
6	1336 Hz
7	1477 Hz
8	1633 Hz

DTMF Dual Tone Table

Number	DTMF Dual Tones
0	941 Hz + 1336 Hz
1	697 Hz + 1209 Hz
2	697 Hz + 1336 Hz
3	697 Hz + 1477 Hz
4	770 Hz + 1209 Hz
5	770 Hz + 1336 Hz
6	770 Hz + 1477 Hz
7	852 Hz + 1209 Hz
8	852 Hz + 1336 Hz
9	852 Hz + 1477 Hz
*	941 Hz + 1209 Hz
#	941 Hz + 1477 Hz

5.4.4 Binary Signal (V.34) (UF-595 only)

This Service Mode is used to check the binary V.34 Signals output. Signals can be output to the line using the following procedure.

Step	Operation or Unit Condition	LCD Display
1	Standby	MAR-12-1999 15:00 00%
2	Press "FUNCTION" and then "7".	SET MODE (1-6) ENTER NO. OR V ^
3	Press "MONITOR" four times, then press "**".	SERVICE MODE ENTER NO. OR V ^
4	Press "4".	MODEM TEST (1-5) 1: SIGNAL TEST
5	Press "5" and "START".	V.34 MODEM TEST ENTER NO. ■
6	Enter the signal number (01-61) and "START" to select the binary signal.	V.34 MODEM TEST V34 2400sr 2400bps
7	Press "CLEAR" to end the signal generation. To select another signal, repeat step 6.	V.34 MODEM TEST ENTER NO. ■
8	Press "STOP" twice to return to standby.	MAR-12-1999 15:00 00%

Binary Signal Table

Number	Signals	Number	Signals	Number	Signals
01	V34 2400 sr 2400 bps	22	V34 3000 sr 9600 bps	43	V34 3429 sr 4800 bps
02	V34 2400 sr 4800 bps	23	V34 3000 sr 12000 bps	44	V34 3429 sr 7200 bps
03	V34 2400 sr 7200 bps	24	V34 3000 sr 14400 bps	45	V34 3429 sr 9600 bps
04	V34 2400 sr 9600 bps	25	V34 3000 sr 16800 bps	46	V34 3429 sr 12000 bps
05	V34 2400 sr 12000 bps	26	V34 3000 sr 19200 bps	47	V34 3429 sr 14400 bps
06	V34 2400 sr 14400 bps	27	V34 3000 sr 21600 bps	48	V34 3429 sr 16800 bps
07	V34 2400 sr 16800 bps	28	V34 3000 sr 24000 bps	49	V34 3429 sr 19200 bps
08	V34 2400 sr 19200 bps	29	V34 3000 sr 26400 bps	50	V34 3429 sr 21600 bps
09	V34 2400 sr 21600 bps	30	V34 3000 sr 28800 bps	51	V34 3429 sr 24000 bps
10	V34 2800 sr 4800 bps	31	V34 3200 sr 4800 bps	52	V34 3429 sr 26400 bps
11	V34 2800 sr 7200 bps	32	V34 3200 sr 7200 bps	53	V34 3429 sr 28800 bps
12	V34 2800 sr 9600 bps	33	V34 3200 sr 9600 bps	54	V34 3429 sr 31200 bps
13	V34 2800 sr 12000 bps	34	V34 3200 sr 12000 bps	55	V34 3429 sr 33600 bps
14	V34 2800 sr 14400 bps	35	V34 3200 sr 14400 bps	56	ANSam
15	V34 2800 sr 16800 bps	36	V34 3200 sr 16800 bps	57	CM
16	V34 2800 sr 19200 bps	37	V34 3200 sr 19200 bps	58	JM
17	V34 2800 sr 21600 bps	38	V34 3200 sr 21600 bps	59	INFO0c & TONEB
18	V34 2800 sr 24000 bps	39	V34 3200 sr 24000 bps	60	INFO0c & TONEA
19	V34 2800 sr 26400 bps	40	V34 3200 sr 26400 bps	61	PPh & AC & ALT
20	V34 3000 sr 4800 bps	41	V34 3200 sr 28800 bps		
21	V34 3000 sr 7200 bps	42	V34 3200 sr 31200 bps		

5.5 Service Mode 5 (Diagnostic)

5.5.1 CCD Test

This Service Mode is used to check the CCD.

Use the following procedure to initiate the test.

Step	Operation or Unit Condition	LCD Display
1	Standby	MAR-12-1999 15:00 00%
2	Press "FUNCTION" and then "7".	SET MODE (1-6) ENTER NO. OR V Λ
3	Press "MONITOR" four times, then press "**".	SERVICE MODE ENTER NO. OR V Λ
4	Press "5".	DIAGNOSTIC (1-3) 1:CCD TEST
5	Press "START". The scanner will be active.	1:CCD TEST * CHECK NOW *
6	Press "STOP" twice to return to standby.	MAR-12-1999 15:00 00%

5.5.2 LCD / LED Test

This Service Mode is used to check the LCD and LEDs.
Use the following procedure to initiate the test.

Step	Operation or Unit Condition	LCD Display
1	Standby	<div>MAR-12-1999 15:00 00%</div>
2	Press "FUNCTION" and then "7".	<div>SET MODE (1-6) ENTER NO. OR V ^</div>
3	Press "MONITOR" four times, then press "8".	<div>SERVICE MODE ENTER NO. OR V ^</div>
4	Press "5".	<div>DIAGNOSTIC (1-3) 1:CCD TEST</div>
5	Press "2" and "START". 1) LCDs display as shown at right. 2) All LEDs will light.	<div>2:LCD/LED TEST * CHECK NOW *</div> <div><div></div><div></div></div>
6	Press "STOP" twice to return to standby.	<div>MAR-12-1999 15:00 00%</div>

5.6 Service Mode 6 (RAM Initialization)

Initializes RAM and restores the Function Parameters to their default values.

Note:

This operation should be performed when the unit is first installed.

Step	Operation or Unit Condition	LCD Display
1	Standby	MAR-12-1999 15:00 00%
2	Press "FUNCTION" and then "7".	SET MODE (1-6) ENTER NO. OR V ^
3	Press "MONITOR" four times, then press "*".	SERVICE MODE ENTER NO. OR V ^
4	Press "6".	* RAM INITIALIZE * ENTER NO. OR V ^
5	Press "V" or "^" to select the initialization mode. (See Table)	* RAM INITIALIZE * LOGO/ID/PSWD CLEAR
6	Press "START".	LOGO/ID/PSWD CLEAR * COMPLETED *
7	Returns to step 3 and press "STOP" to return to standby.	MAR-12-1999 15:00 00%

RAM Initialization Table

No.	Initialize Mode	Description
99	SHIPMENT SET (A)	Deletes all setting information, except parameter number 80 and 81, then set default values.
98	SHIPMENT SET (B)	Deletes all setting information, except parameter number 61, 80 and 81, then set default values.
97	FLASH MEMORY CLEAR	Deletes all information in the Flash Memory.
16	LBP ERROR LOG CLEAR	Clears the Printer Error Log.
15	LOGO/ID/PSWD CLEAR	Clears the Logo, ID, Polling Password.
14	ALL JOB CLEAR	Clears all Jobs stored in Flash Memory.
13	PROGRAM DIAL CLEAR	Clears the Program keys.
12	ABBR DIAL CLEAR	Clears the One-touch and ABBR Numbers.
11	JOURNAL CLEAR	Clears the Journal contents.
*	PARAMETER INITIALIZE	Restores the Fax and Function Parameters to default values.

5.7 Service Mode 7 (LBP Service Mode)

This Service Mode is used to change printer parameters and verify printer information.

Use the following procedure to change printer parameter.

Step	Operation or Unit Condition	LCD Display
1	Standby	MAR-12-1999 15:00 00%
2	Press "FUNCTION" and then "7".	SET MODE (1-6) ENTER NO. OR V ^
3	Press "MONITOR" four times, then press "**".	SERVICE MODE ENTER NO. OR V ^
4	Press "7".	LP SERVICE MODE (1-2) 1:LBP PARAMETER SET
5	1) Press "START" for printer parameter settings. 2) Press "2" and "START" to get the printer information. Ex: Enter "START" for printer parameter settings.	LBP PARAMETER SET 1.PRINTER COUNTER
6	Press "3" and "START". Then enter the number of pages. Ex: Enter "50" and press "START".	LBP PARAMETER SET 3.OUT OF TONER
7	Press "V" or "^" to select another Parameter Name (See Table) or press "CLEAR" to return to step 4.	LP SERVICE MODE (1-2) 1.LBP PARAMETER SET
6	Repeat step 5 through 7 to request operation, or press "STOP" twice to return to standby.	MAR-12-1999 15:00 00%

Sub-Code	Parameter Name	Description
1	1	Printer Counter
	2	LBP Fuser Reset
	3	Out of Toner
2	V^	LBP ROM Version
	V^	LBP Print Available
	V^	LBP MEMORY CAPACITY

5.8 Service Mode 8 (Check & Call)

5.8.1 Overview

This feature enables the Authorized Servicing Dealers to manage and improve the Fax machine maintenance to their customers by alerting them of equipment problems. It also can be used as a Supply Sales Tool by alerting the Dealer that the unit is running Low on Toner. The function overview is as follows:

1. The machine's printer error information is stored in the Printer Report.
2. The printer report can be manually printed when required.
3. When printer errors occurs, the unit can automatically transmit the Service Alert Report to the pre-registered telephone number.
4. When the unit detects Low Toner, it can automatically transmit the Maintenance Alert Report to the pre-registered telephone number.
5. When the unit detects Low Toner, it can automatically print out the Toner Order Form with pre-registered order information.

5.8.2 Printer Reports

- Conditions under which a report can be printed or transmitted

1. Manual print

The Printer Report can be printed by Service Mode 3 (See Section 5.3.2).

2. Automatic transmission/printout

3. Service Alert Report

When the unit detects an Emergency Printer Error, the unit will immediately transmit the Service Alert Report to the pre-registered telephone number. However, the unit will not transmit the Service Alert Report if it finds the same error within the same date in the error log.

4. Maintenance Alert Report

When the unit detects Low Toner, the unit can automatically transmit the Maintenance Alert Report to the pre-registered telephone number. Refer to the Printer Error Code Table.

5. Toner Order Form

When the unit detects Low Toner, the unit can automatically print the Toner Order Form with the pre-registered order information.

Note:

The Service and Maintenance Alert Reports are managed in the same manner as the normal memory transmission (Retry, Incomplete, File List, Display while it is transmitting, Journal).

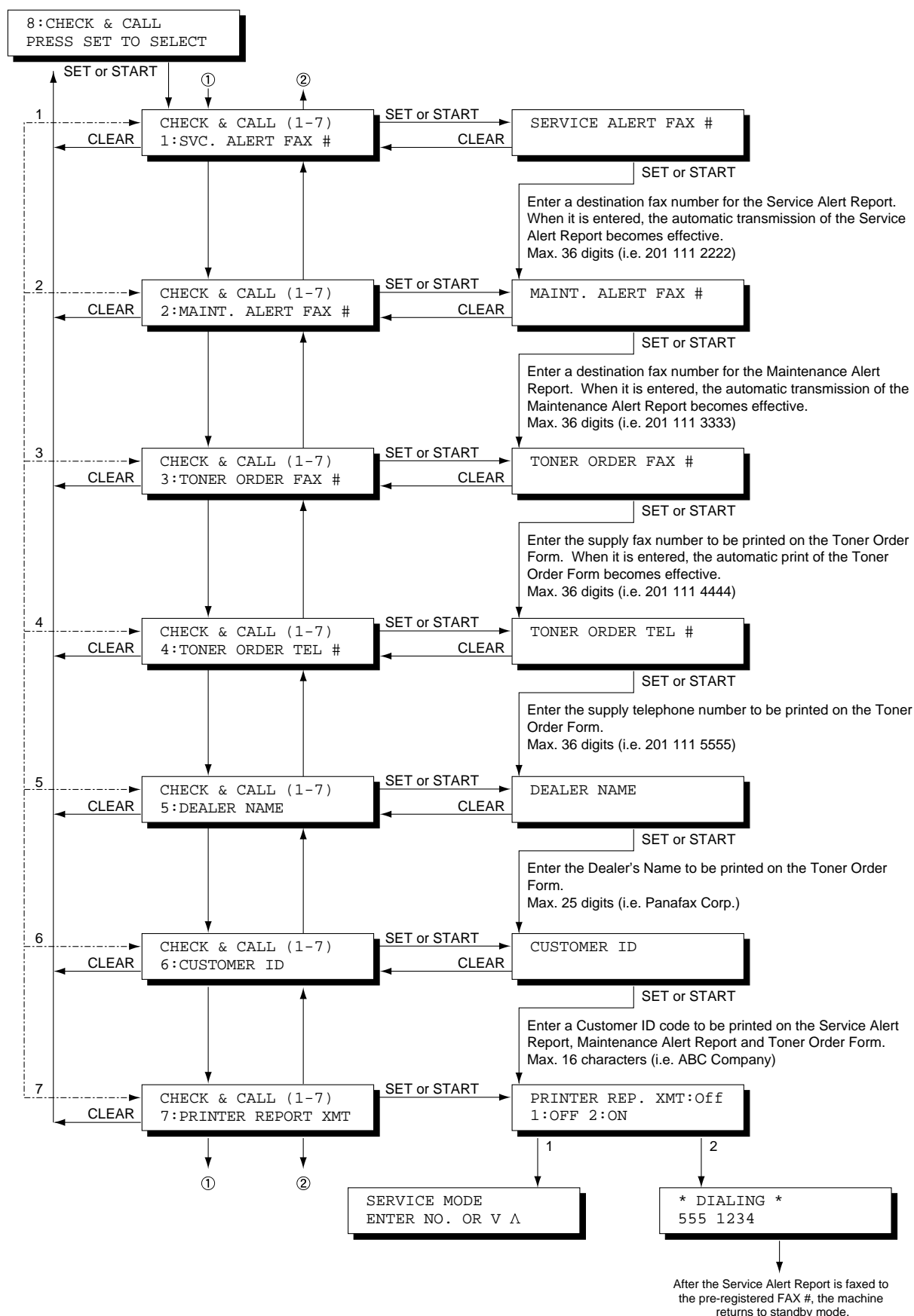
- Printer Error Code Table

Intro. Code	Printer Error Code	LED/LCD	Log only	Tx Report	Condition	Content of Error
001	11	JAM	o		R/C	Paper Jam 1st Cassette.
002	12	JAM	o		R/C	Paper Jam 2nd Cassette.
007	14-18	JAM	o		R/C	Paper Exit Error.
010	00	NO PAPER			R/C	No Paper in 1st or 2nd Cassette.
011	64,65	NO Cassette			S	No 1st or 2nd Cassette.
021	22-26		o	o	R/C	Fuser Problem / LP Thermistor disconnected Problem.
041	00	TONER	o		S/R/C	No Toner
043	00	TONER	o	x	S/R/C	Low Toner Warning
045	61	TONER	o		S	No Toner Cartridge
051	54		o	o	S/R/C	Printer Error
054	31,32,36		o	o	R/C	LSU Problem
055	81,82		o	o	S/R/C	No response from LP Controller
060						Rx Door Open

Note:

1. Transmission Report: o = Service Alert Report,, x = Maintenance Alert Report
2. Condition: R = Receive Mode, C = Copy Mode, S = Standby Mode, T = Transmit Mode

5.8.3 Setting Operation



Note**1. Service Alert Report**

To enable the automatic transmission of Service Alert Report, enter the destination fax telephone number in the "SERVICE ALERT FAX #" field. When a printer error occurs, the Service Alert Report is transmitted to the designated number automatically. A blank entry in this field, disables the Automatic transmission of the Service Alert Report.

2. Maintenance Alert Report

To enable the automatic transmission of Maintenance Alert Report, enter the destination fax telephone number in the "MAINT. ALERT FAX #" field. When a printer error occurs, the Maintenance Alert Report is transmitted to the designated number automatically. A blank entry in this field, disables the Automatic transmission of the Maintenance Alert Report.

3. Toner Order Form

To enable the automatic printout of the Toner Order Form, enter the destination fax telephone numbers in the "Toner Order FAX #" field. When a low toner error occurs, the Toner Order Form is printed automatically. A blank entry in this field, disables the automatic printout of the Toner Order Form.

4. SERVICE ALERT FAX #, this would be the fax telephone number for the Dealer's Service Department.

MAINT. ALERT FAX #, this could be the fax telephone number for the Dealer's Supply Sales Desk.

TONER ORDER FAX #, this could be the fax telephone number for the Dealer's Supply Sales Desk.

TONER ORDER TEL #, this could be the voice telephone number for the Dealer's Supply Sales Desk.

DEALER NAME, this name is printed on the Toner Order Form.

CUSTOMER ID, to identify your customer, enter up to 16 characters user code in this field. This name will be printed on the Service Alert Report, Maintenance Alert Report and Toner Order Form.

5. Printer Report XMT

To manually transmit the Service Alert Report to the pre-registered SERVICE ALERT REPORT FAX #, set the Printer Report XMT to "2:ON".

```
*****
> SERVICE ALERT REPORT <
*****
```

-LOGO PANASONIC

*****-CHARACTER ID - ***** -31415926535897932384-*****

- (1) Date & Time when a problem occurred
- (2) Information Code
- (3) Printer Error Code
- (4) Customer ID
- (5) Fax ROM Version
- (6) LBP ROM Version
- (7) Transmission / Reception / Copy / Print Counters
- (8) Print Error

Last 30 records (Latest on top)

5.8.5 MAINTENANCE ALERT REPORT FORMAT

```

***** DATE MAR-12-1999 ***** TIME 12:14 *****

*****
> MAINTENANCE ALERT REPORT <
*****

LAST PRINT ERROR : MACHINE IS RUNNING OUT OF TONER (1)

CUSTOMER ID      : ABC COMPANY (4)

FAX ROM VERSION  : UF-595 AAV10000AU (5)
LBP ROM VERSION  : 300102(6)

TRANSMIT COUNTER : 999999 (7)
RECEIVE COUNTER  : 999999
COPY COUNTER     : 999999
PRINT COUNTER    : 999999

                                -LOGO PANASONIC -

***** -CHARACTER ID - ***** -31415926535897932384-*****

```

Explanation of Contents

(1) Low Toner Message (Fixed)

(4) Customer ID

(5) Fax ROM Version

(6) LBP ROM Version

(7) Transmission / Reception / Copy / Print Counters

"MACHINE IS RUNNING OUT TONER"

Up to 16 characters (User IdentificationCode)

5.9 Service Mode 9 (System Maintenance)

5.9.1 Overview

This Service Mode is used to maintain and/or update the firmware of the machine.
Use the following procedure for System Maintenance.

Step	Operation or Unit Condition	LCD Display
1	Standby	MAR-12-1999 15:00 00%
2	Press "FUNCTION" and then "7".	SET MODE (1-6) ENTER NO. OR V ^
3	Press "MONITOR" four times, then press "8".	SERVICE MODE ENTER NO. OR V ^
4	Press "9".	SYSTEM MAINT. (1-8) 1:FIRMWARE UPDATE
5	Press "START" to update the firmware. Enter No. or press "V" or "^" to select the maintenance to be performed. Ex: Enter "2".	SYSTEM MAINT. (1-8) 2:FIRMWARE BACKUP
6	Press "START" and "SET".	FIRMWARE BACKUP * IN PROGRESS *
7	After the backup is completed, repeat step 4 through 6 to request an operation.	SERVICE MODE ENTER NO. OR V ^
8	Press "STOP" to return to standby.	MAR-12-1999 15:00 00%

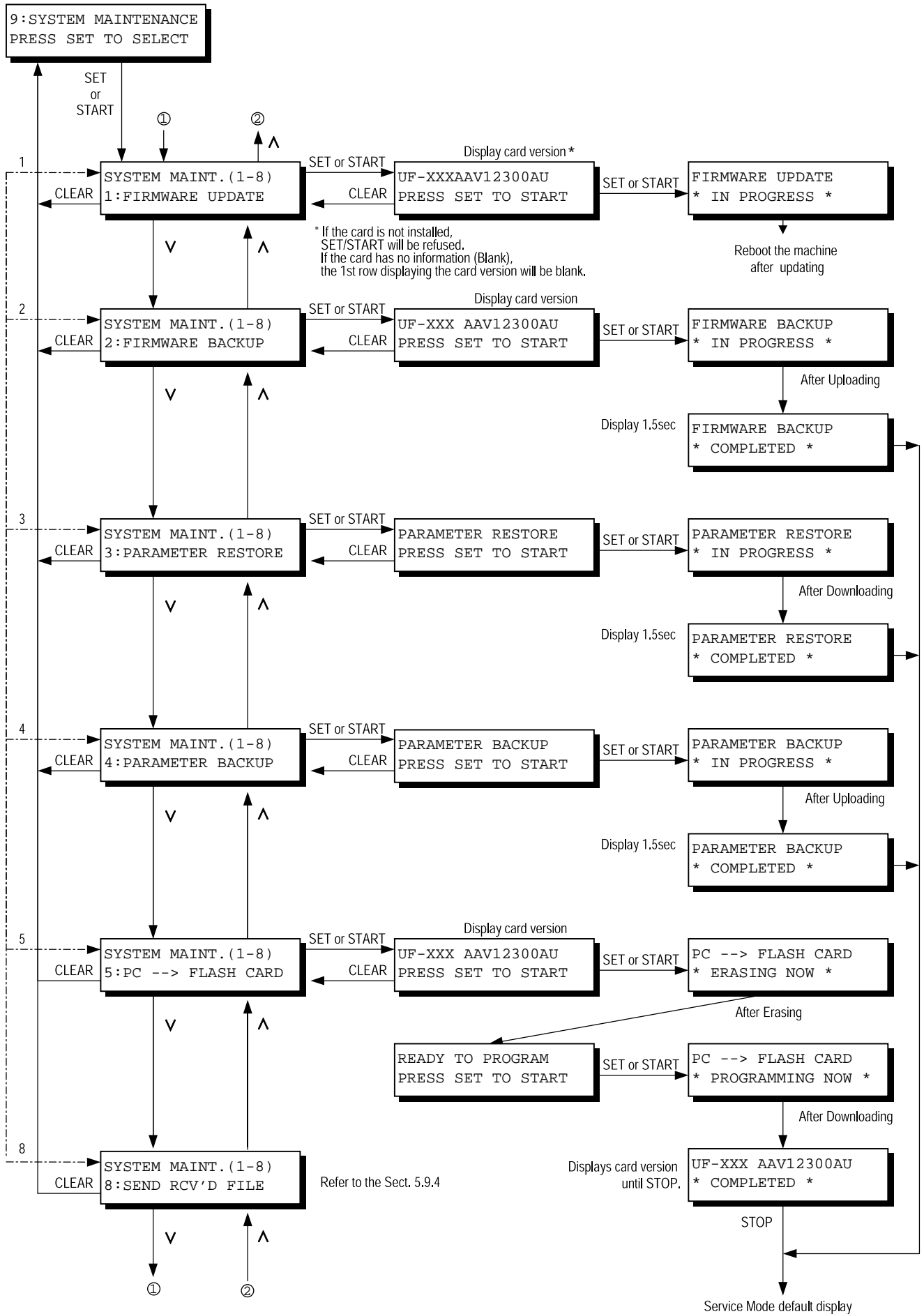
System Maintenance Table

No.	Maintenance Mode	Description
1	FIRMWARE UPDATE	Updates the firmware in the machine with the Master Firmware Card.
2	FIRMWARE BACKUP	Creates a Backup Card of the machine's firmware. (A 2 MB or higher Flash Memory Card is required)
3	PARAMETER RESTORE	Restores the parameters from the Backup Card into the machine.
4	PARAMETER BACKUP	Creates a Backup Card of the machine's parameters. (A 1 MB or higher Flash Memory Card is required)
5	PC → FLASH CARD	Creates a Master Firmware Card using the Firmware Update Kit. (A 2 MB or higher Flash Memory Card is required)
8	SEND RECEIVED FILE	Transfers documents from memory to another fax machine during a fatal printer error.

Note:

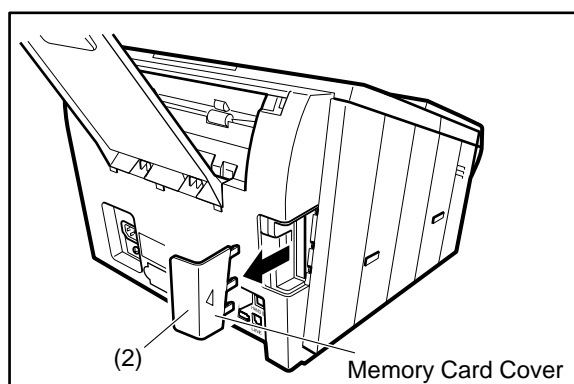
The created Backup Card must be removed from the machine.

5.9.2 Operation

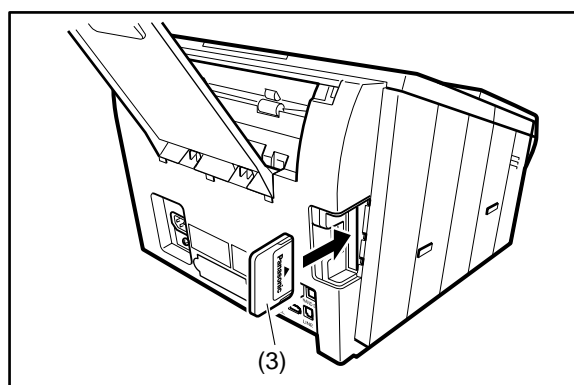


5.9.3 Recovering F-ROM Firmware Update Failure

If the Firmware Update is interrupted before completion, the machine will not be able to progress into the Standby Mode and the LCD display will remain Blank. If this happens, please follow the steps described below to recover from a failed firmware update.



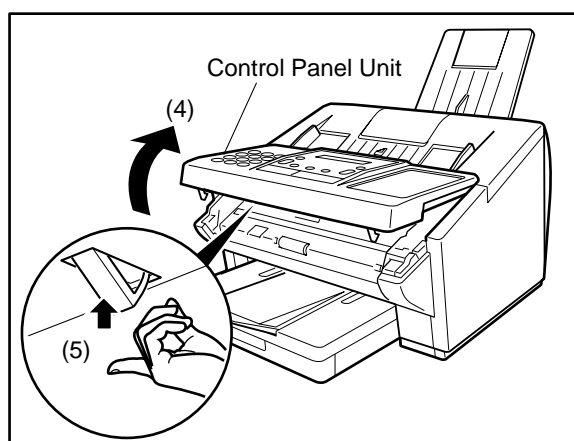
- (1) Unplug the **Power Cord**.
- (2) Remove the **Memory Card Cover**.



- (3) Insert the **Flash Memory Card** gently into the card slot with the Panasonic logo facing to the outside of the machine.

Caution:

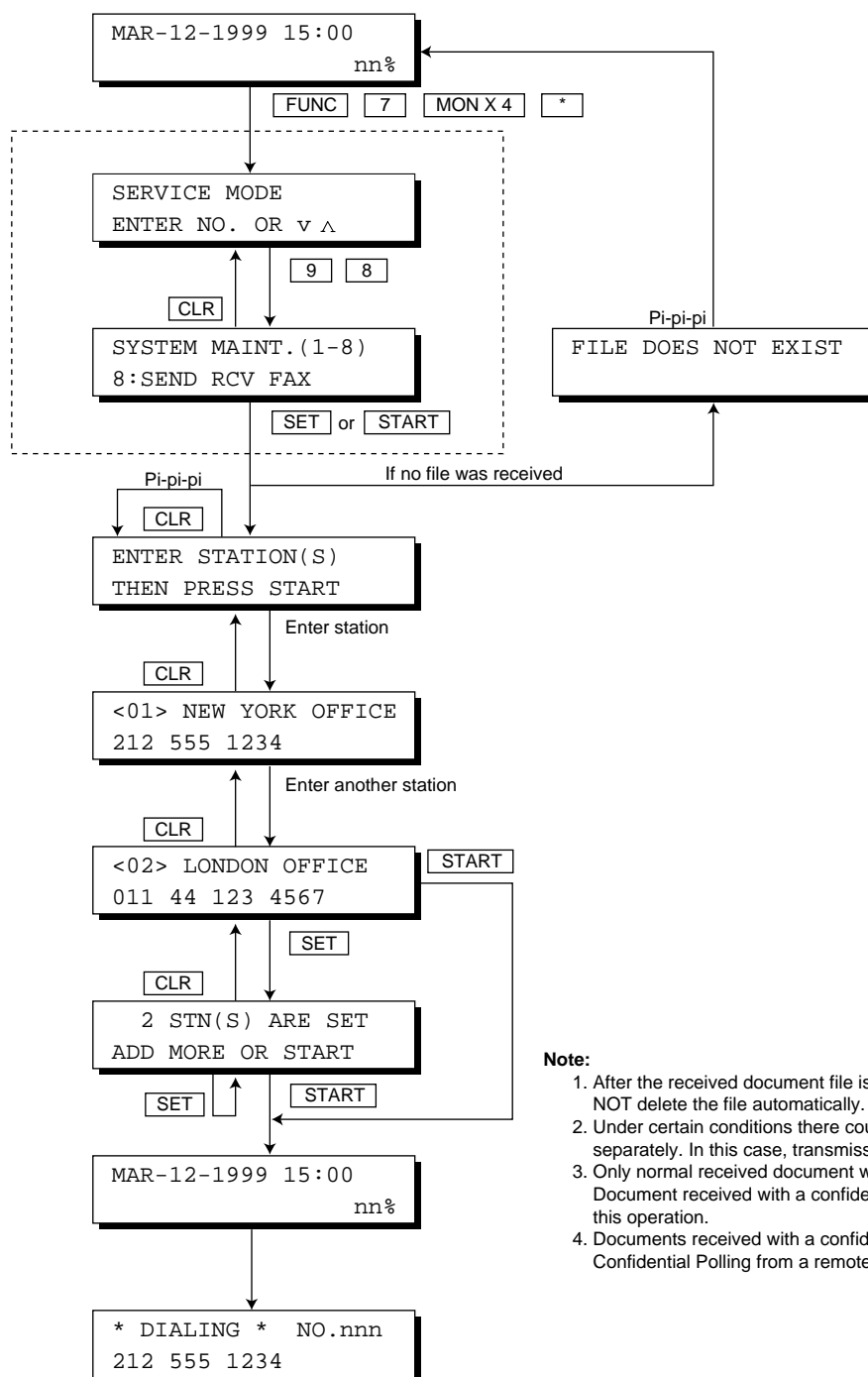
Installing the Flash Memory Card in the wrong direction may damage the connecting pins inside the machine.



- (4) Open the **Control Panel Unit**.
- (5) Activate the **Read Point Sensor** with your finger and plug in the **Power Cord**.
- (6) Wait approximately 10 seconds, release the **Read Point Sensor** and close the **Control Panel Unit** (ADF).
- (7) Allow the unit to complete the Firmware Update (approx. 1-minute). When completed, the unit will reboot and progress to the Standby Mode.
- (8) Unplug the **Power Cord**.
- (9) Remove the **Flash Memory Card**.
- (10) Re-install the **Memory Card Cover**.
- (11) Plug in the **Power Cord**.
- (12) Perform Parameter Initialization (see page 173).

5.9.4 Send Received File

This function is the relief mode which makes it possible to retrieve memory received documents during a fatal printer error by transferring the documents to another fax machine.



Note:

1. After the received document file is successfully transmitted, unit will NOT delete the file automatically.
2. Under certain conditions there could be two (2) received files stored separately. In this case, transmission will be made separately.
3. Only normal received document will be transmitted.
Document received with a confidential code will NOT be transmitted by this operation.
4. Documents received with a confidential code, can be retrieved by using Confidential Polling from a remote station.

6 System Description

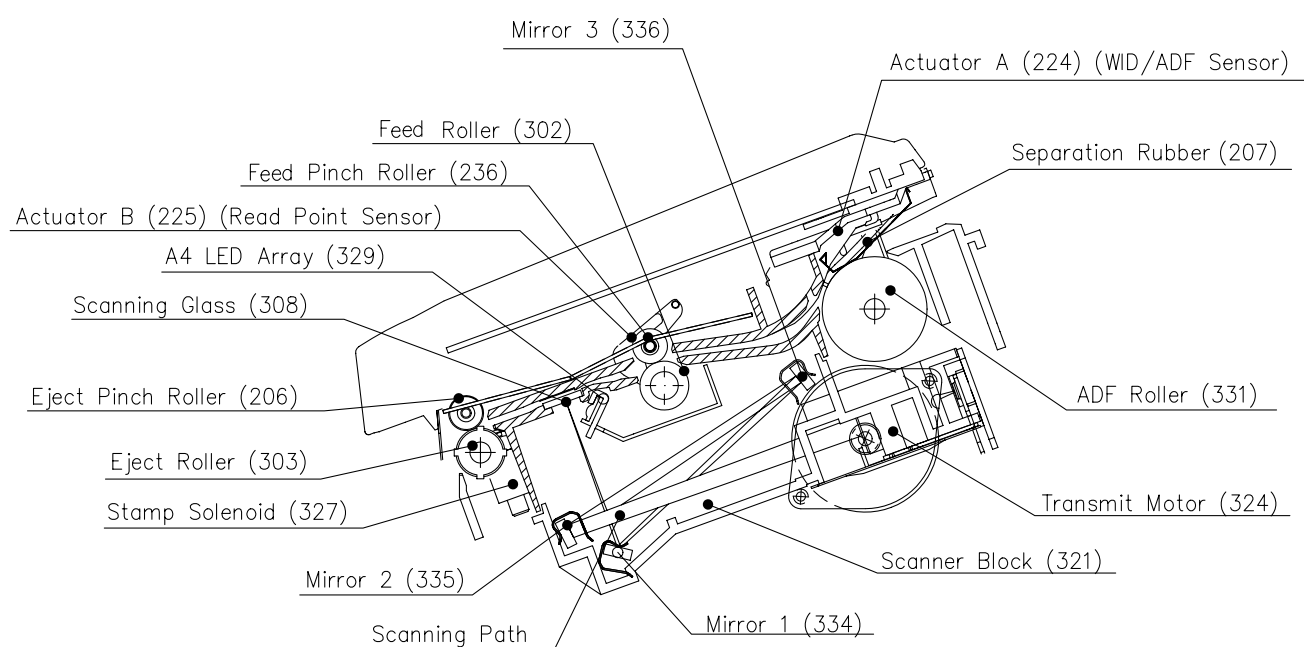
6.1 Mechanical Operation

The mechanical units are installed in a single unit body. The mechanical block consists of the following mechanisms:

Transmit Mechanism
Control Panel
Receive Mechanism
Printing Process Operation
Covers and Enclosures

6.1.1 Transmit Mechanism

The Transmit Mechanism consists of components which feed, scan and eject documents, as well as send signals. These components and their functions are as follows:



ADF Mechanism

The ADF (Automatic Document Feeder) automatically feeds paper into the unit, and consists of ADF Roller and Separation Rubber. Each document is placed face-down on the **Printer Cover** (106) before being fed into the unit.

- The **ADF Roller** (331) feeds individual pages into the scanning area.
- The **Separation Rubber** (207) separates documents placed on the ADF, preventing multiple feeding.

A4 LED Array (329)

The UF-585/595 has one LED Array, used as a light source to illuminate the document. The LED Array turns ON when the Read Point Sensor is activated by the document leading edge.

Transmit Guide Unit

The Transmit Guide Unit is an auxiliary part used for feeding and ejecting documents. It consists of the **Transmit Guide** (301), **Control Panel Chassis** (201), **Feed Roller** (302), **Eject Roller** (303), and **Eject Pinch Roller** (206) and **Feed Pinch Roller** (236). This unit also provides the white scanning area and serves as a base for electronic white reference.

Transmit Mechanism Drive System

This system feeds documents through the transmitting mechanism, and consists of rollers, gears and a stepper motor.

- The **Transmit Motor** (324), a stepper motor, controlled by the CPU, drives the ADF Roller, Feed Roller and Eject Roller, with the speed based on the density of the picture information.
- The **Feed Roller** (302) feeds the document to the scanning point.
- The **Eject Roller** (303) feeds and ejects the document out of the machine.

Transmit Mechanism Sensors

The **ADF Sensor** (PC1), activated by **Actuator A** (224), detects the presence of documents on the ADF Tray and multiple pages.

The **RP (Read Point) Sensor** (PC3), activated by **Actuator B** (225), detects the lead and trail edges of the document, controlling the reading position. The CPU determines that a document is jammed if Actuator B is not tripped within a specified time after the ADF Roller starts feeding, and disengages the ADF Roller by reversing the Transmit Motor direction. The **ADF Door Sensor** (PC2), activated by **ADF Door Actuator** (226), halts all scanning operations when the Control Panel Unit is opened.

Verification Stamp Unit

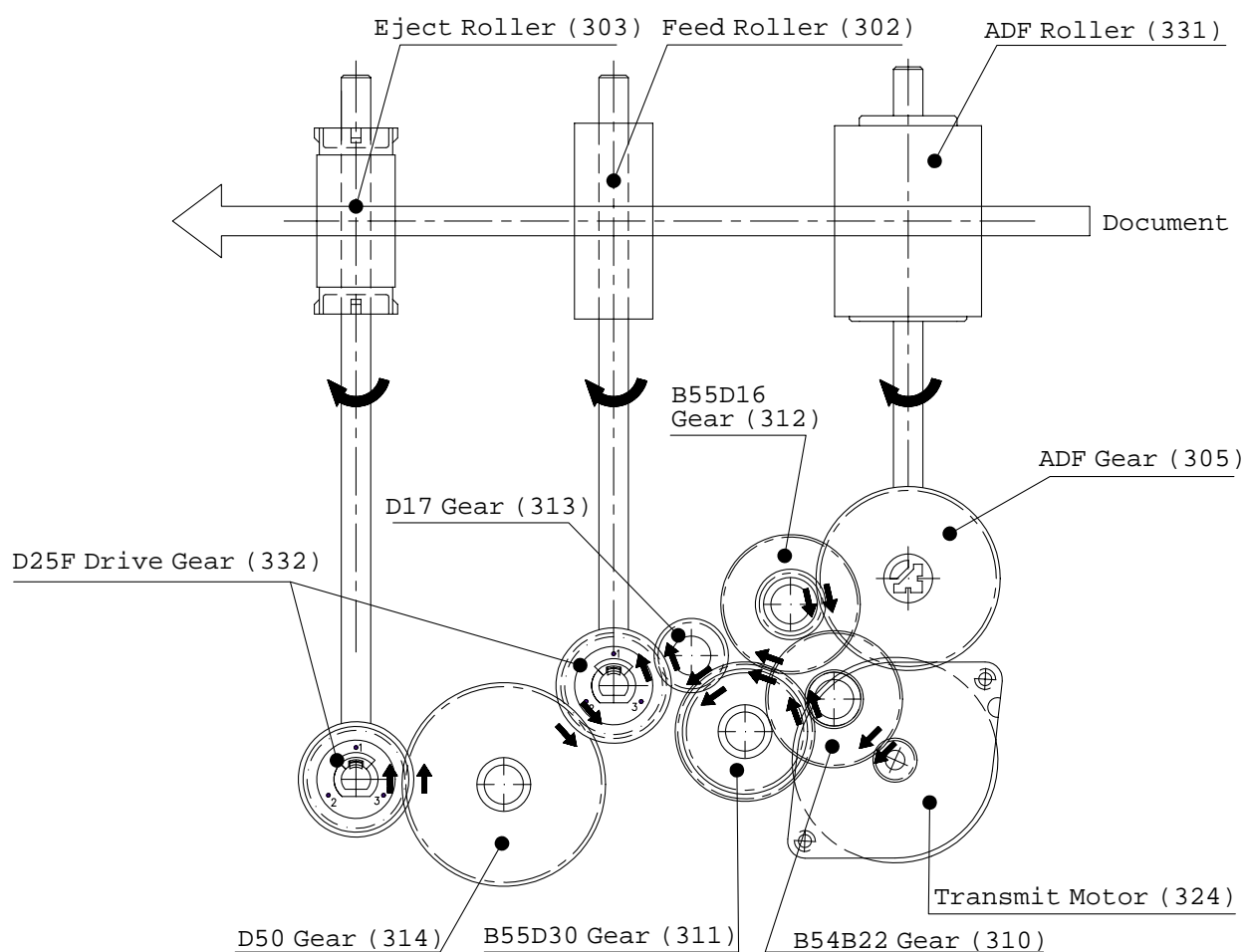
The Verification Stamp Unit stamps an "X" mark on the front of the document after the document is successfully transmitted or stored. It consists of the **Stamp Head** (325), **Stamp Holder** (326) and **Stamp Solenoid** (327).

Scanner Block (321)

The Scanner Block consists of three mirrors, a **Lens**, and a **CCD PC Board** (337).

- The mirrors, **Mirror 1** (334), **Mirror 2** (335) and **Mirror 3** (336) reflect image information, in the form of light, through the Lens.
- The **Lens** focuses the image information and passes it to the CCD.
- The **CCD**, mounted on the CCD PC Board, converts the image information into an electronic signal.

Drive System

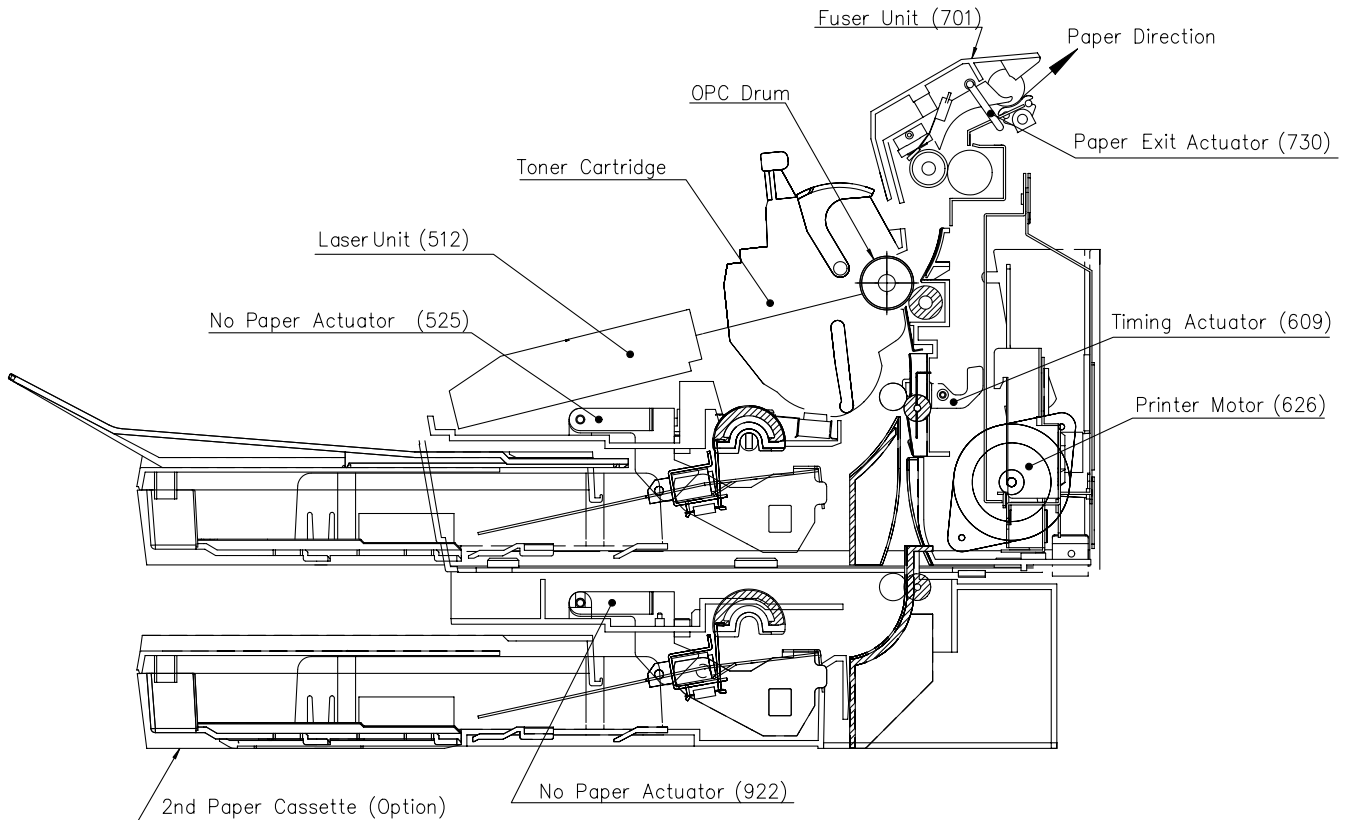


6.1.2 Control Panel

The Control Panel consists of the **PNL1 PC Board** (231) and **LCD Unit** (233), which displays the various status messages, and a membrane-type panel.

6.1.3 Receive Mechanism

The Receive Mechanism consists of the Laser Unit (LSU), OPC (Organic Photo Conductor) Drum, and various other parts which ensure the normal feeding of recording paper. These components and their functions are as follows:



Paper Feed Units No.1 and 2

UF-585: Paper Feeder Unit No. 2 is not available.

UF-595: Paper Feeder Unit No. 2 is available as an option.

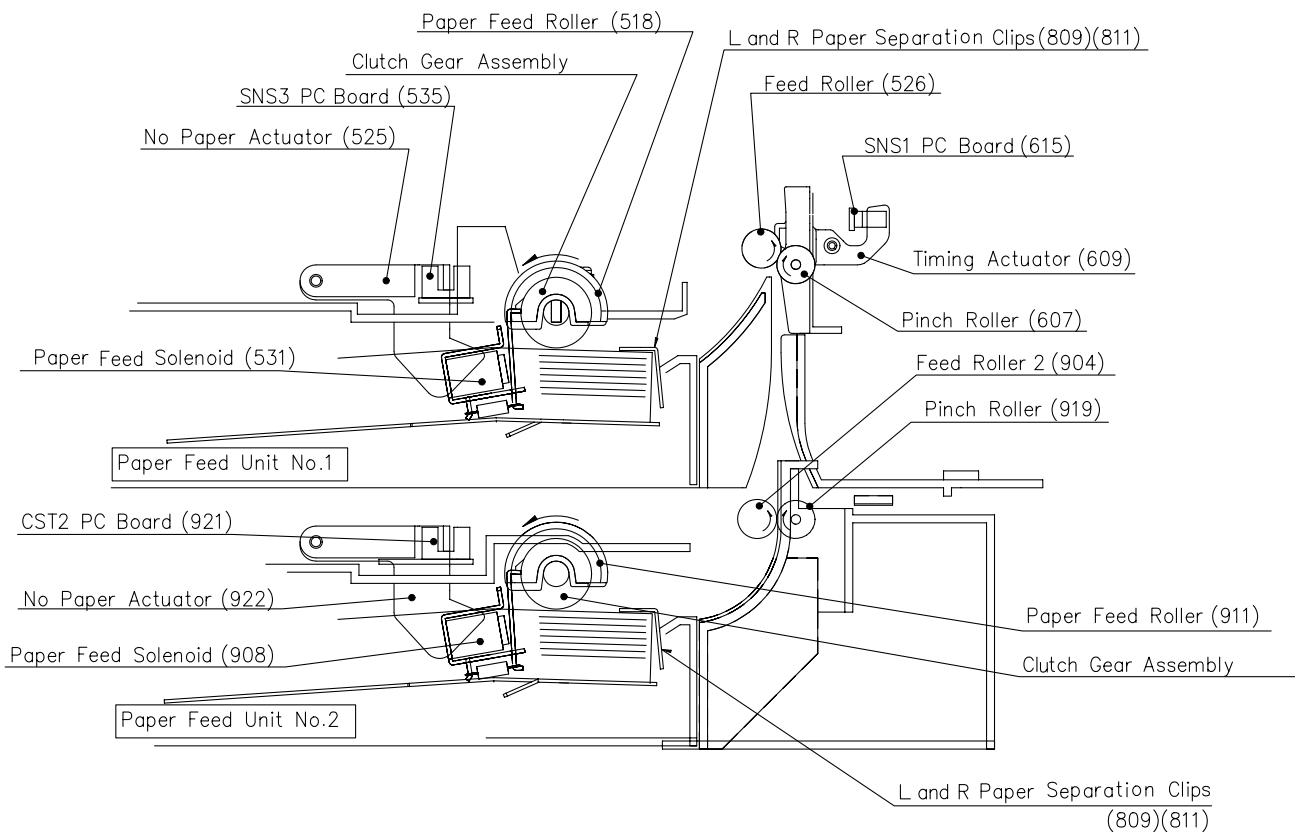
Paper Feed Unit No.1 Operation

1. The printing operation begins when the nPRNT (Print Request) output signal level goes Low. The **Printer Motor (626)** is initialized.
2. The **Paper Feed Solenoid (531)** is energized for a specified period of time and turned ON. This activates the **Paper Feed Roller (518)**, which rotates one revolution. The paper is separated into individual sheets by the **L and R Paper Separation Clips (809 and 811)** and transported to the **Feed Roller (526)**.
3. After one revolution the **Paper Feed Roller (518)** stops, releasing the paper. The **Feed Roller (526)** transports the paper to the drum area.
4. The actual printing process starts at a specified time after the **Timing Actuator (609)** is activated and stops at a specified period of time after the trailing edge clears the **Timing Actuator (609)**.

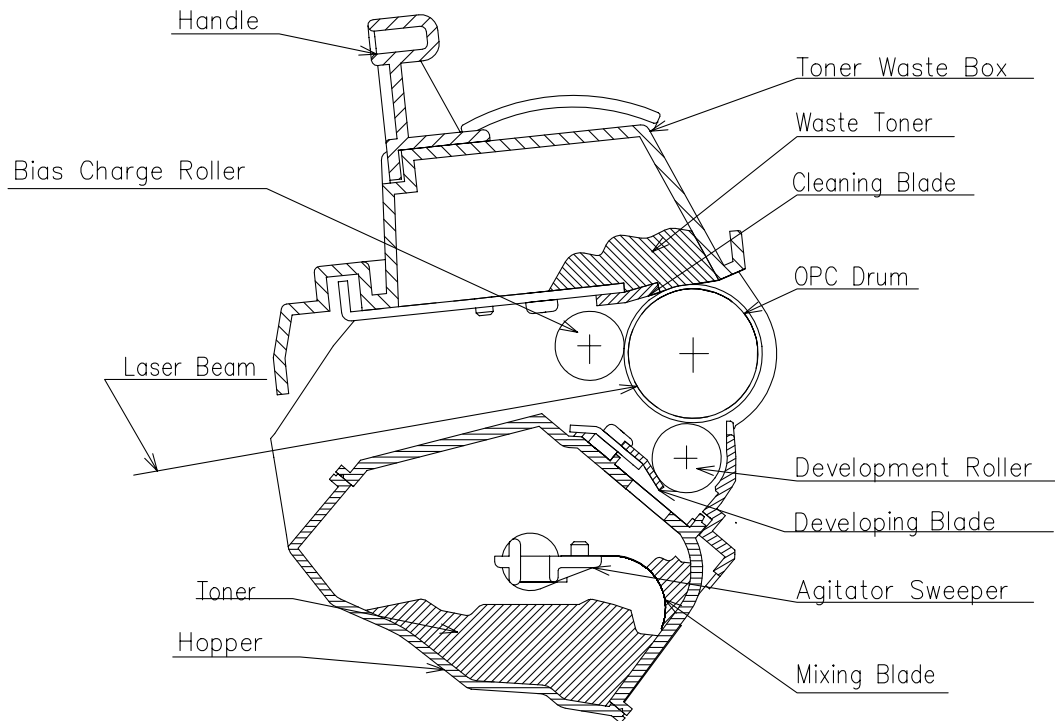
Paper Feed Unit No. 2 (Optional) Operation

The Paper Feed Unit No.1 always takes priority. The Paper Feed Unit No. 2 becomes operational only when the cassette No.1 runs out of paper and the NP Sensor is deactivated, causing the nPCHK1 output signal level to go High.

1. The printing operation begins when the nPRNT (Print Request) output signal level goes Low. The **Printer Motor** (626) is initialized.
2. The **Paper Feed Solenoid** (908) is energized for a specified period of time and is turned ON. This activates the **Paper Feed Roller** (911), which rotates one revolution. The paper is separated into individual sheets by the **L and R Paper Separation Clips** (809) (811) and transported to the **Feed Roller 2** (904).
3. After one revolution the **Paper Feed Roller** (911) stops, releasing the paper. The **Feed Roller 2** (904) and the **Feed Roller** (526) transports the paper to the drum area.
4. The actual printing process starts at a specified time after the **Timing Actuator** (609) is activated and stops at a specified period of time after the trailing edge clears the **Timing Actuator** (609).



6.1.4 Printing Process Operation



Charge

In the dark, the Bias Charge Roller (BCR) applies a high, uniform negative charge to the surface of the OPC Drum. The surface potential is approximately -650 VDC and remains because the drum has a high electric resistance in the dark.

Exposure

A portion of the laser beam is deflected to the timing sensor [Beam Detection (BD) Sensor], which controls the start timing of scanning on the OPC Drum. The CPU also uses the timing sensor to detect abnormal signals. The light beam from the laser diode is modulated by the digital signal (nVIDEO) and converted to parallel light waves by the collimator lens. The beam is then directed to the rotating tetragon mirror, where it is reflected to the f-θ lens and then focused onto the OPC Drum surface. The laser beam moves across the surface of the OPC Drum in the scanning direction. Where the laser beam is applied, the negative charge on the drum dissipates, and where the laser is not applied, the negative charge remains. This action forms a latent, electrostatic image on the OPC Drum, corresponding to the original image.

Development

This development process uses a conventional method, where toner coats a Development Roller and transfers to the latent image on the OPC Drum. In the Toner Cartridge, the (mono-component) toner is negatively charged by the friction between the rotating Development Roller (Mag Roller) and the Developing Blade. This combination and the rotation of the Mixing Blade transfers the toner from the reservoir and forms a brush effect on the Mag roller. Where the magnetic brush lightly touches the OPC Drum, the negatively charged toner is attracted to the latent image on the drum, forming a mirror image of the original on the drum. Any remaining toner is removed from the Mag Roller by the Developing Blade and is recycled back into the toner reservoir. A bias voltage of approximately 1.5 kVACp-p at 1.87 kHz, riding on a -300 VDC bias is applied to the magnetic brush to achieve maximum print quality.

The **Toner Sensor** (513), a magnetic sensor, detects the remaining quantity of toner in the Toner Cartridge. When the “TONER” lamp starts to blink, there is still enough toner left in the cartridge to print 100 pages (based on ITU-T Image No.1). When the toner runs out, the display will show: “OUT OF TONER & INFO CODE 041” and the machine is disabled from printing any copies.

The **Toner Cartridge** consists of OPC Drum, Bias Charge Roller, Development Roller, Developing Blade, Cleaning Blade, Mixing Blades and Toner Waste Box. The **OPC Drum** is an aluminum cylinder coated with an OPC (Organic Photo Conductor) sensitive material. This surface is photoelectric (retains the charge in the dark and releases the charge in the light). The potential differences on the surface (a static latent image) form a printed image. The **Bias Charge Roller** provides a uniform charge on the OPC Drum surface. The **Development Roller** supplies toner to the drum by rotating over the magnet. The **Developing Blade** evens the toner on the Development Roller surface and also charges the toner by friction. The **Cleaning Blade** cleans by scraping the remaining toner off the OPC Drum surface after transfer.

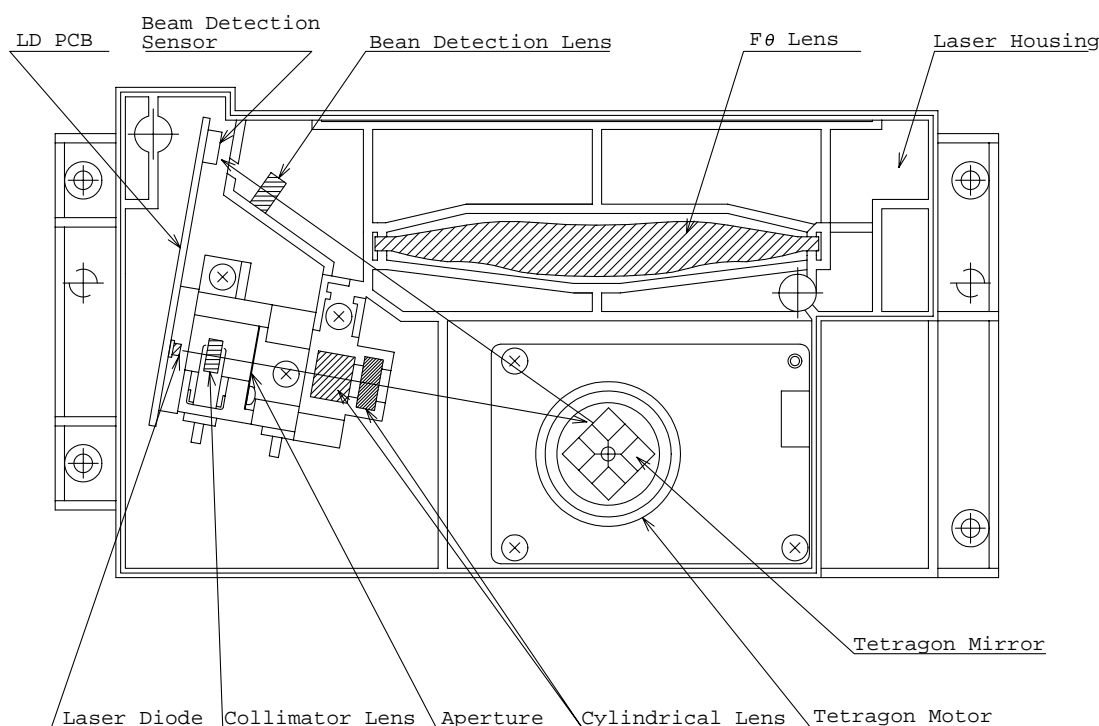
Transfer and Separation

As the paper is fed between the OPC Drum and the **Bias Transfer Roller (BTR)** (604), a positive charge of approximately $+2.5 \mu\text{A}$ steady current is applied to the backside of the paper by the BTR. The toner particles are attracted away from the drum towards the surface of the paper. During cleaning, the BTR is charged to approximately -1500 VDC to repel toner on the OPC Drum and prevent toner from being attracted to the BTR. After transfer has occurred, the paper passes over the **Discharge Plate** (612) in the **Transfer Guide** (601), reducing the difference of potential between the OPC Drum and the paper. The stiffness of the paper causes the paper to separate from the drum.

Cleaning

After transfer, some toner may remain on the surface of the OPC Drum. A Cleaning Blade scrapes the OPC Drum surface, and the removed toner is moved into the Toner Waste Box, inside the Toner Cartridge.

Laser Unit



Laser

A 5 mW Laser Diode, with a wave length of 780 nm (± 20 nm), provides a modulated beam controlled by nVIDEO. The beam power on the drum surface is approximately 0.15 mW, and is controlled by the monitor circuit.

Collimator Lens

This lens converges and focuses the laser beam, converting it to parallel light.

Aperture

This controls the size of the laser beam.

Tetragon Mirror and Motor

The tetragon scanner consists of a 4-sided mirror, directly driven by a tetragon motor, revolving at 7,018 rpm (400 dpi) or 10,762 rpm (600 dpi). Scanning speed for 400 dpi and 600 dpi are controlled by motor clock supplied from LPC PCB. Motor clock for 400 dpi is 702 Hz and 600 dpi is 1,076 Hz. The laser beam is reflected against these mirrors and swept over the recorded width in the scanning direction. This unit features a stable line scanning speed, a precision mirror reflection angle, a reflection free surface, and instant start.

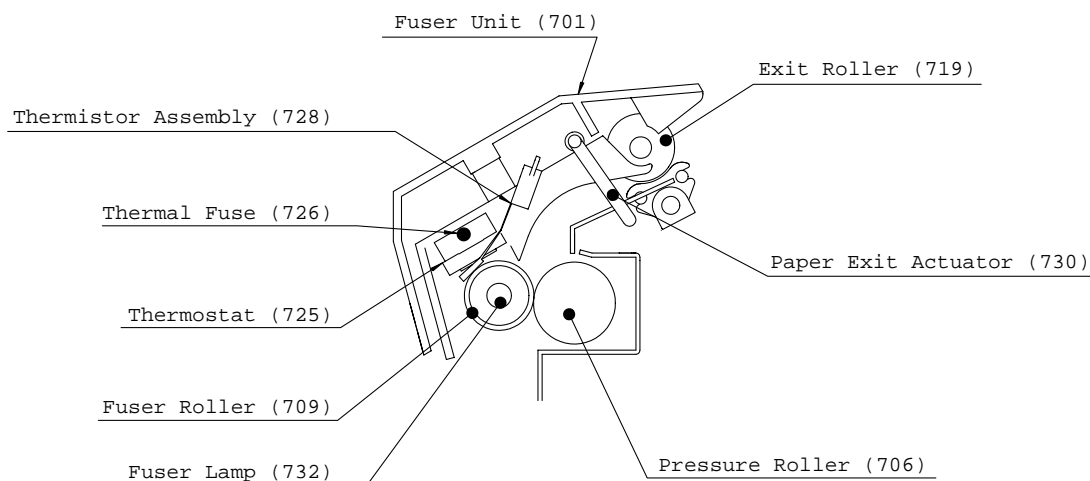
Beam Detection (BD) Lens and Beam Detection (BD) Sensor

The BD Lens receives the reflected light from the Polygon Mirror and redirects it into the BD Sensor, which converts the laser beam into electrical signals and sets the start timing for the scanning line.

f-θ Lens

This amorphous plastic, molded lens is designed to provide parallel laser light across the surface of the drum, providing a constant scanning speed.

Fusing and Paper Exit



Fuser Unit (701)

The Fuser Unit, consisting of the Fuser Lamp, Fuser Roller, Pressure Roller, Thermistor, and Thermostat, bonds the toner into the paper using heat and pressure.

Fuser Lamp (732)

Located in the Fuser Roller is a Halogen lamp that serves as the heat source for the Fuser Roller.

Fuser Roller (709)

A Teflon coated roller supplies the heat for bonding the toner to the paper. The temperature of the surface is kept constant at approximately 160°C (±5°C) or (320°F).

Pressure Roller (706)

This converted PFA tube Silicon Rubber Roller applies pressure to the Fuser Roller, assisting in bonding the toner to the paper.

Thermistor Assembly (728)

The Thermistor, a heat sensitive resistor, in contact with the Fuser Roller, monitors the surface temperature. The temperature detected is used to control the ON/OFF switching of the Fuser Lamp. It also acts as the primary overhear prevention device. A comparator circuit on the FCB PC Board acts as a secondary overhear protection and becomes active at approximately 185°C (365°F).

Thermostat (725)

A Thermostatic Fuse, part of the power line for the Fuser Lamp, provides an extra overhear protection by opening when the Fuser Roller surface temperature reaches approximately 200°C (392°F) and remains there for 1 minute. If the primary and secondary overhear protection does not halt the rise in temperature, the thermostat opens, removing power from the Fuser Lamp. When the Thermostat opens, it must be replaced.

SNS4 PC Board (729) [Paper Exit Sensor]

This sensor detects the presence of printed paper at the exit. If no paper passes, or if paper is over the sensor too long, a "RECORDING PAPER JAM" message is displayed. When paper passes over the sensor, the output is Low (Low Active).

Thermal Fuse (726)

It is placed in series with the Thermostat on the power line of the Fuser Lamp and performs the tertiary overheating prevention (in case the Thermostat fails) by opening when the surrounding temperature reaches approximately 216°C (420.8°F).

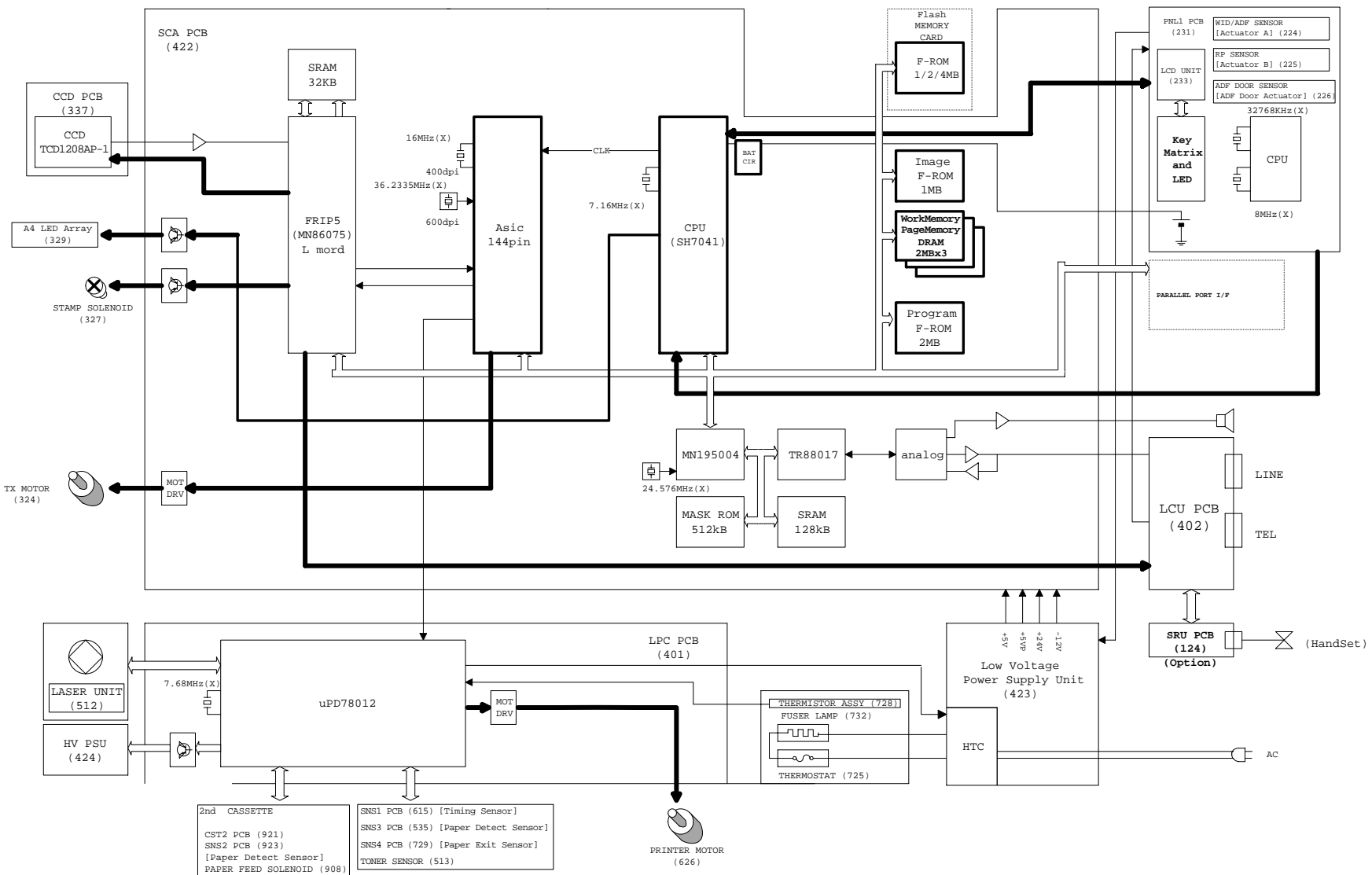
6.1.5 Covers and Enclosures

The **Printer Cover** (106) contains the **R and L Document Guides** (107 and 108), which adjust to the paper width to properly feed the original documents. The **Left Cover** (103) has a **Speaker** (117) mounted inside and shields the circuit boards. It also contains the **Memory Card Cover** (110) that provides access to the Flash Memory Card. The **Rear Cover (105)** contains the **Recording Paper Tray** and **Sub Tray** (1007), used to support legal size documents.

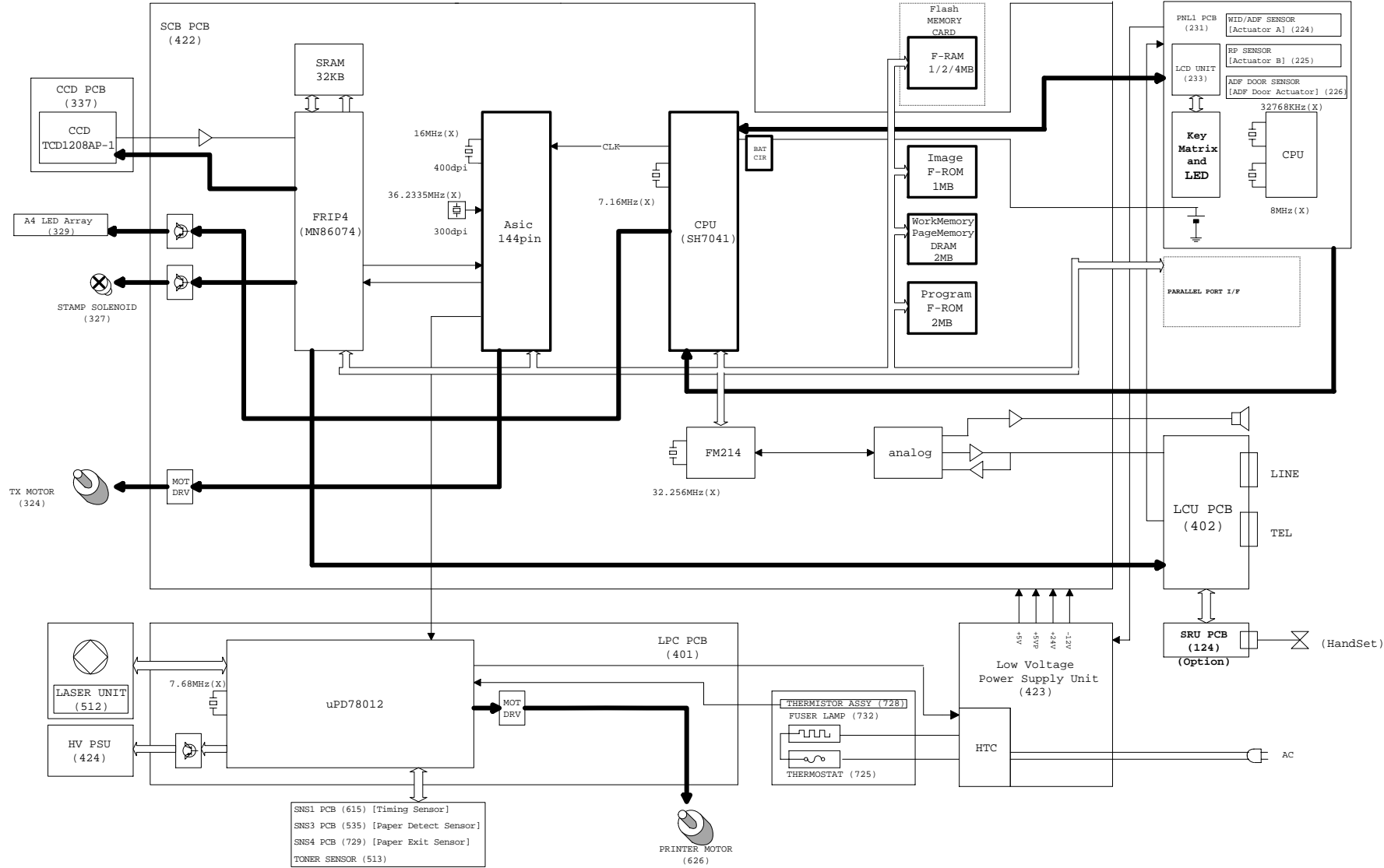
6.2 Electrical Circuit Explanation

6.2.1 Fax Block Diagram

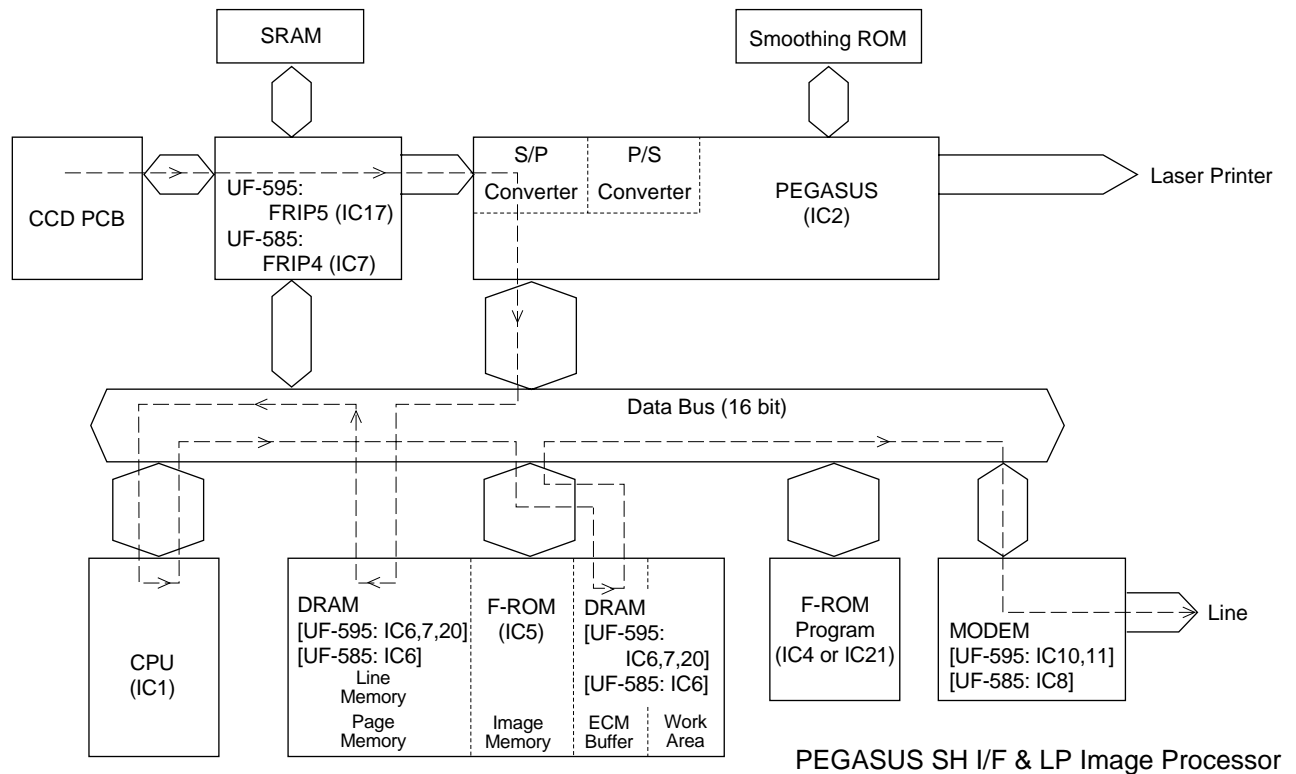
6.2.1.1 Fax Block Diagram (UF-595)



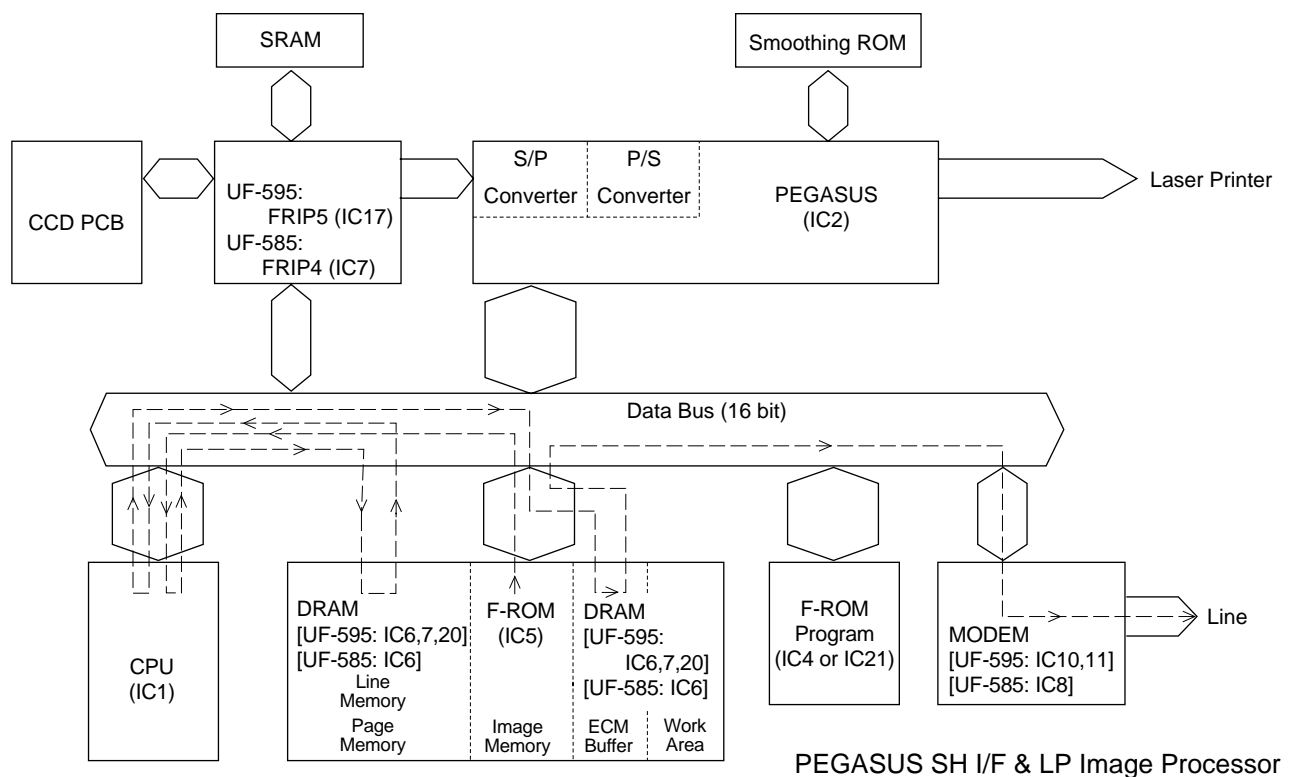
6.2.1.2 Fax Block Diagram (UF-585)



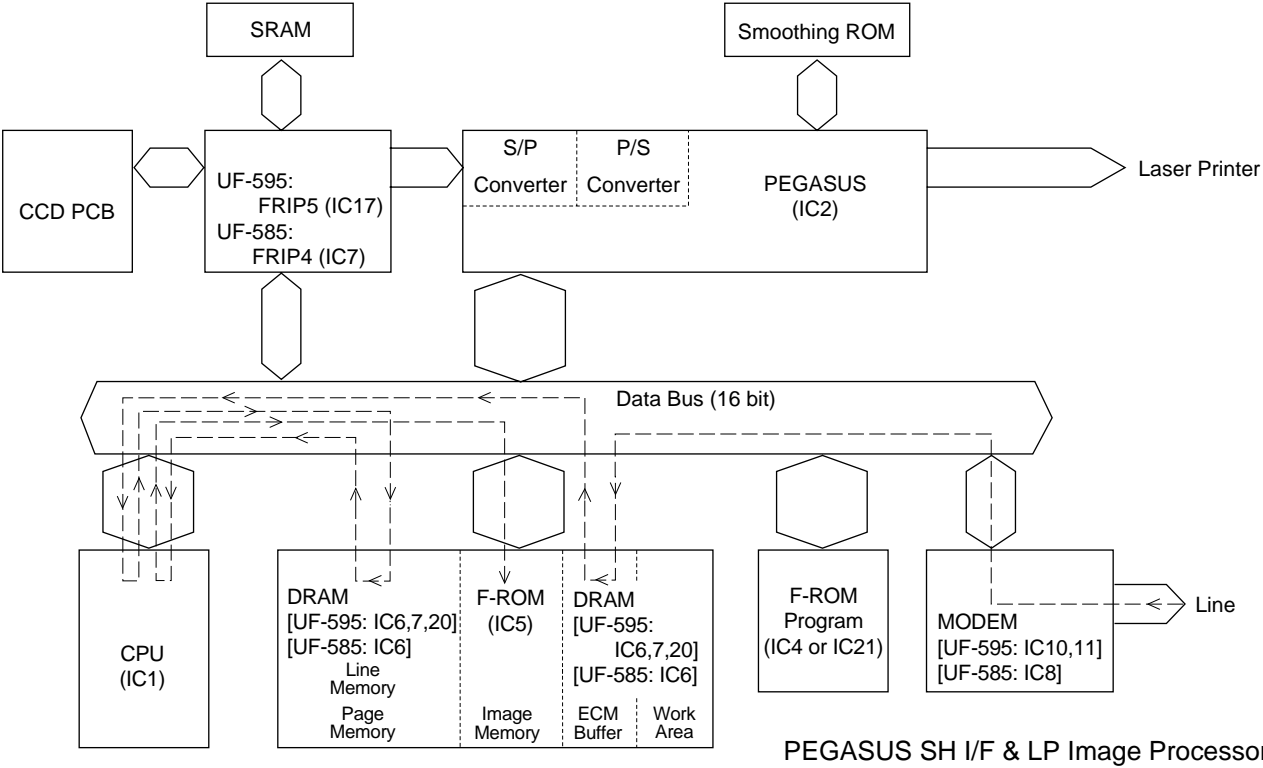
6.2.2 Signal Routing



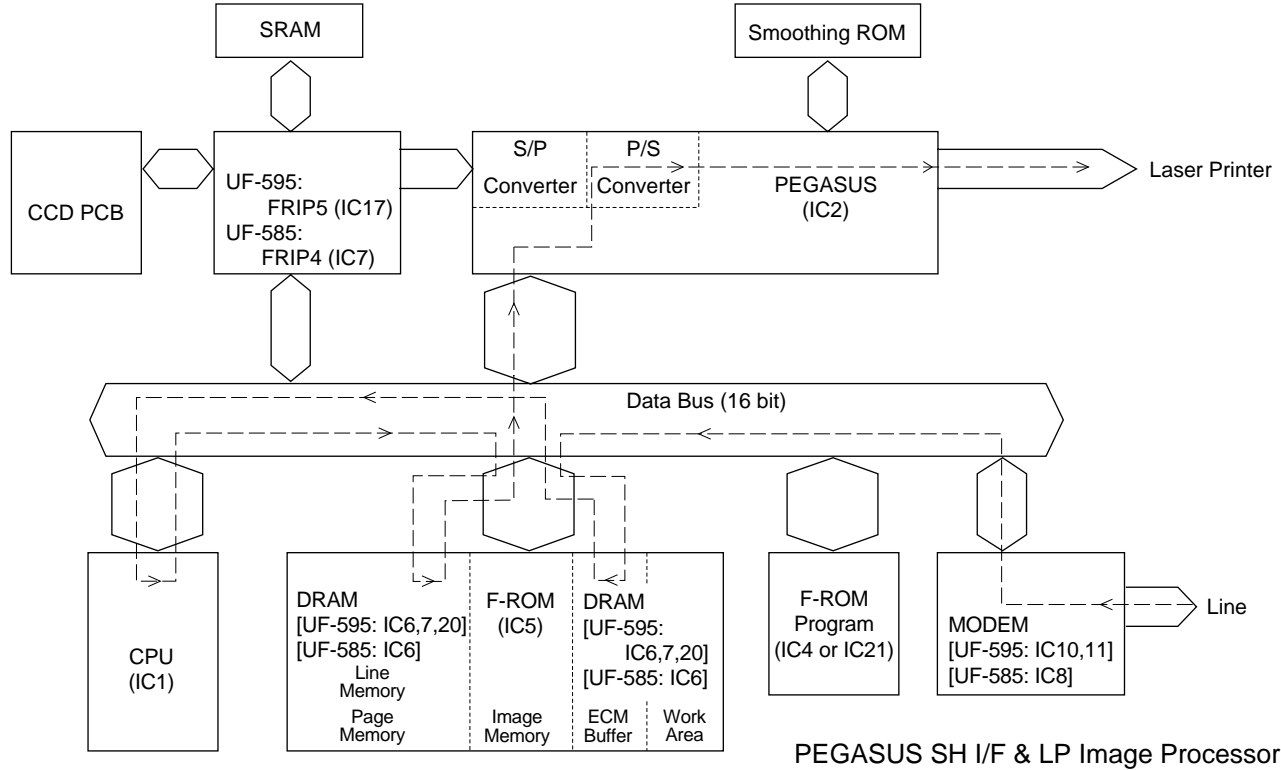
ADF Transmission



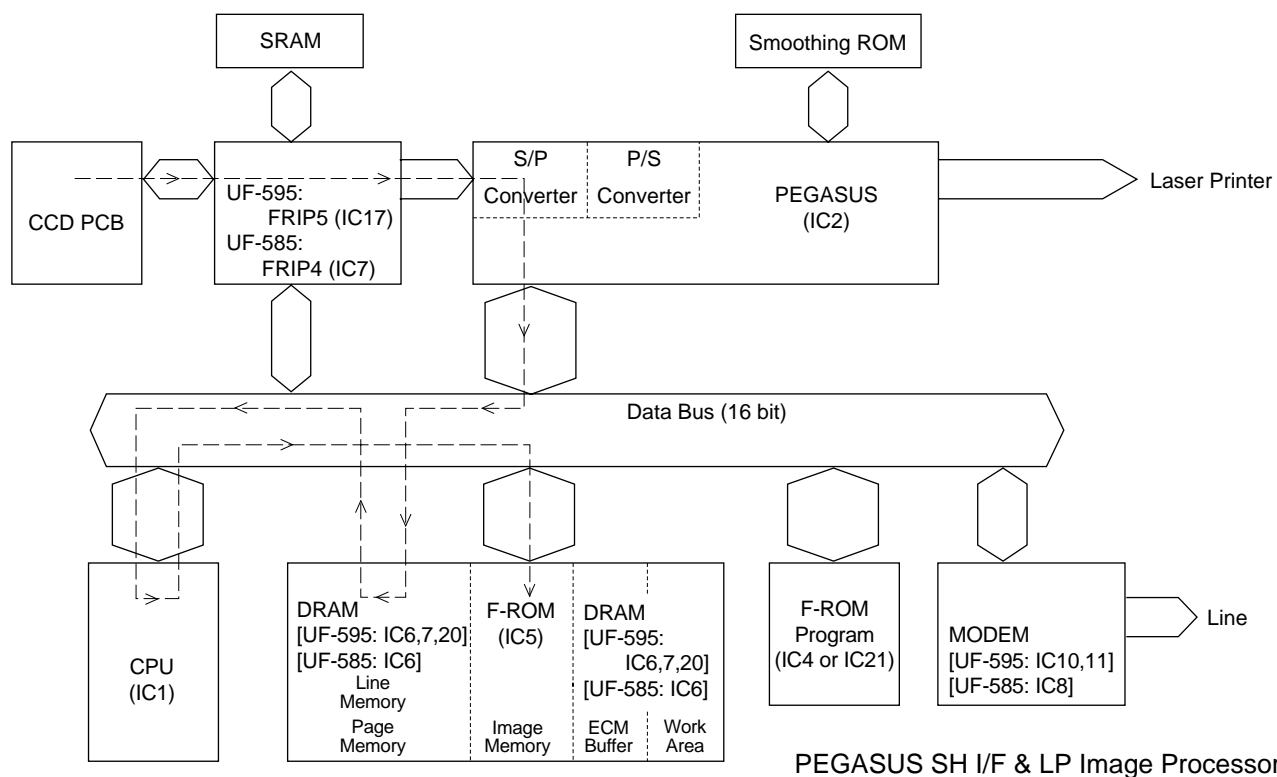
Memory Transmission



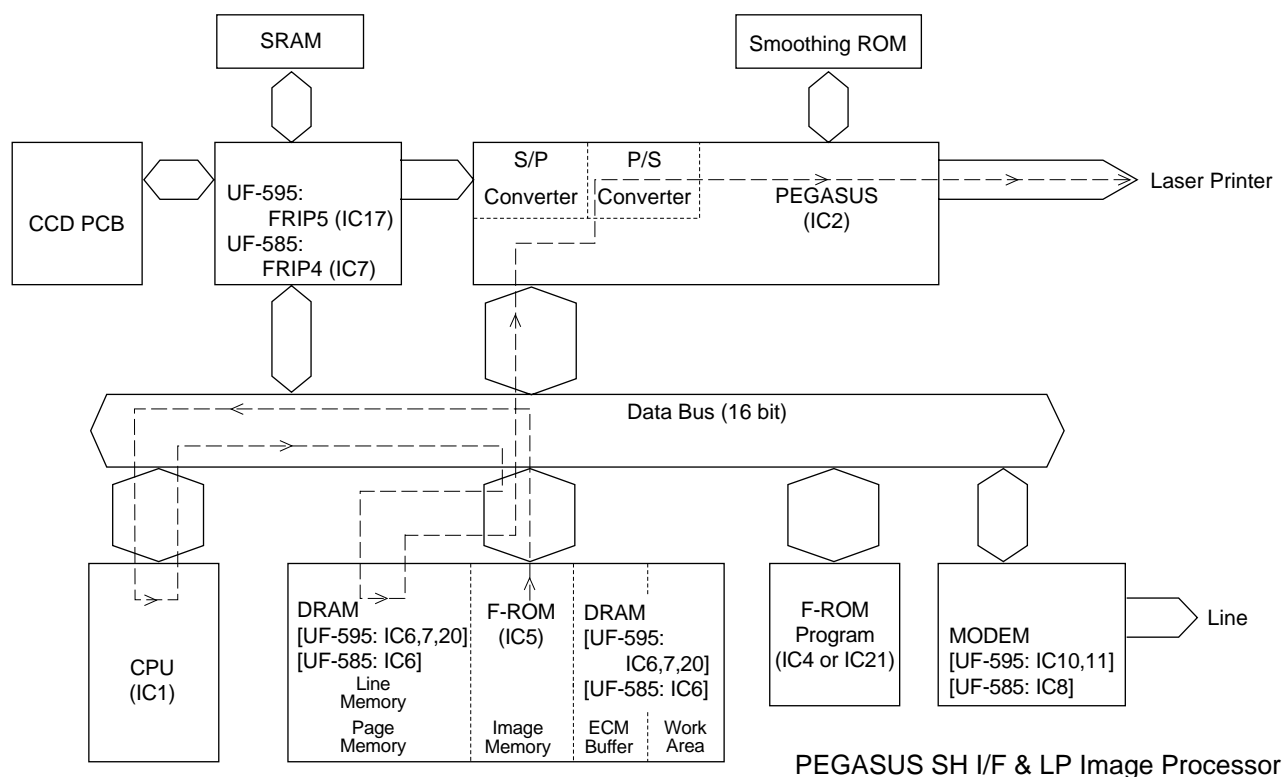
Memory Reception



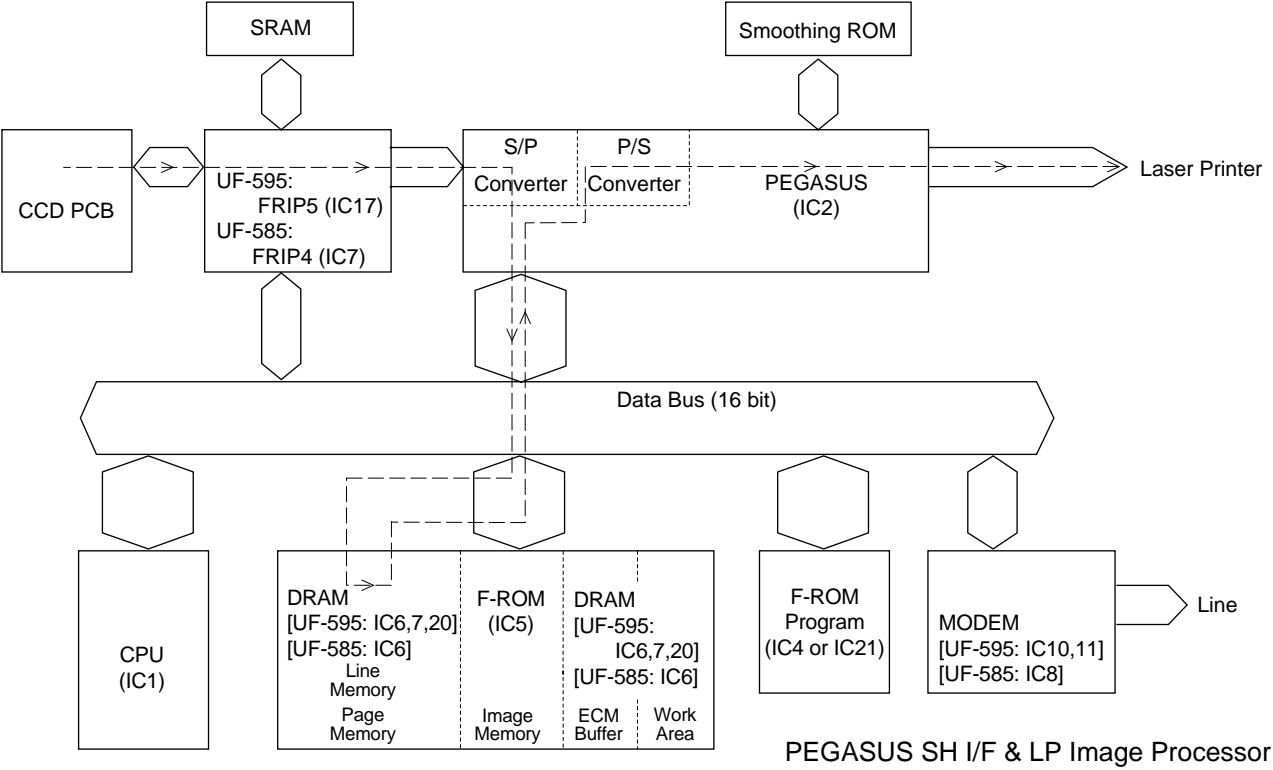
Direct Reception



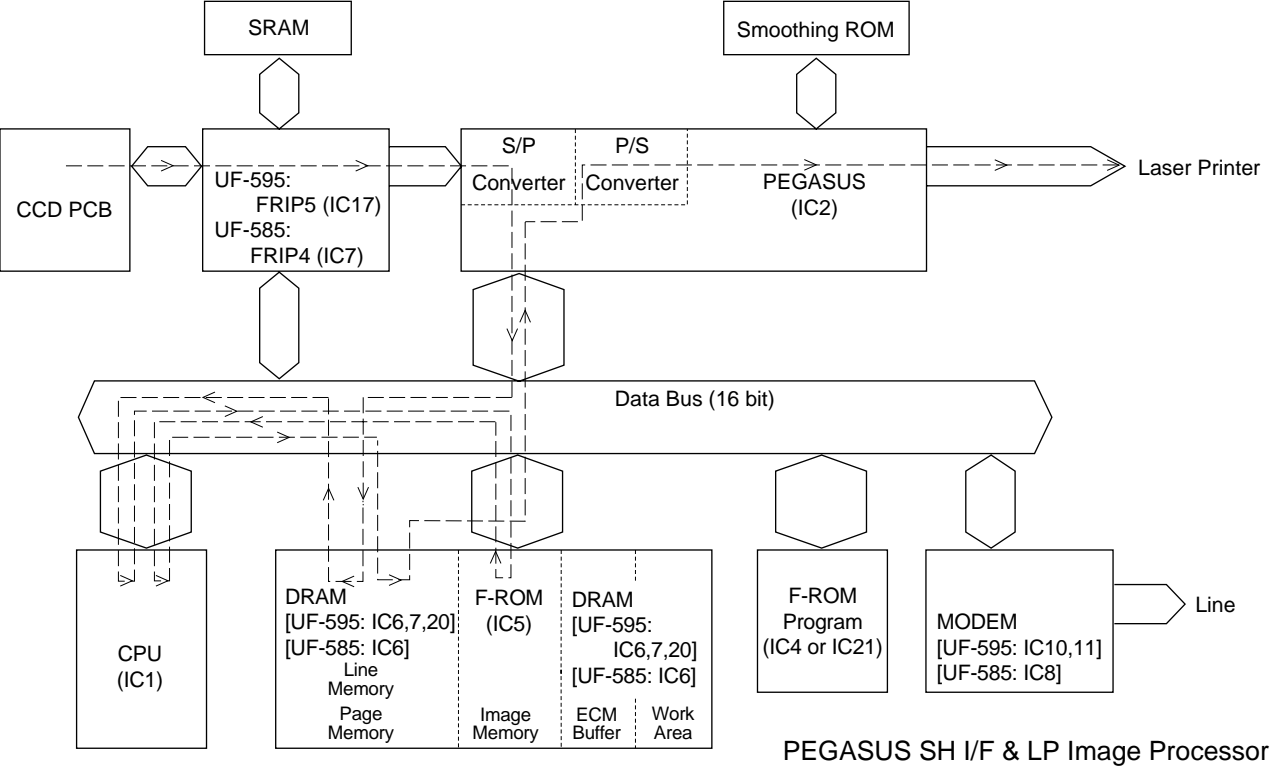
Scan into Memory



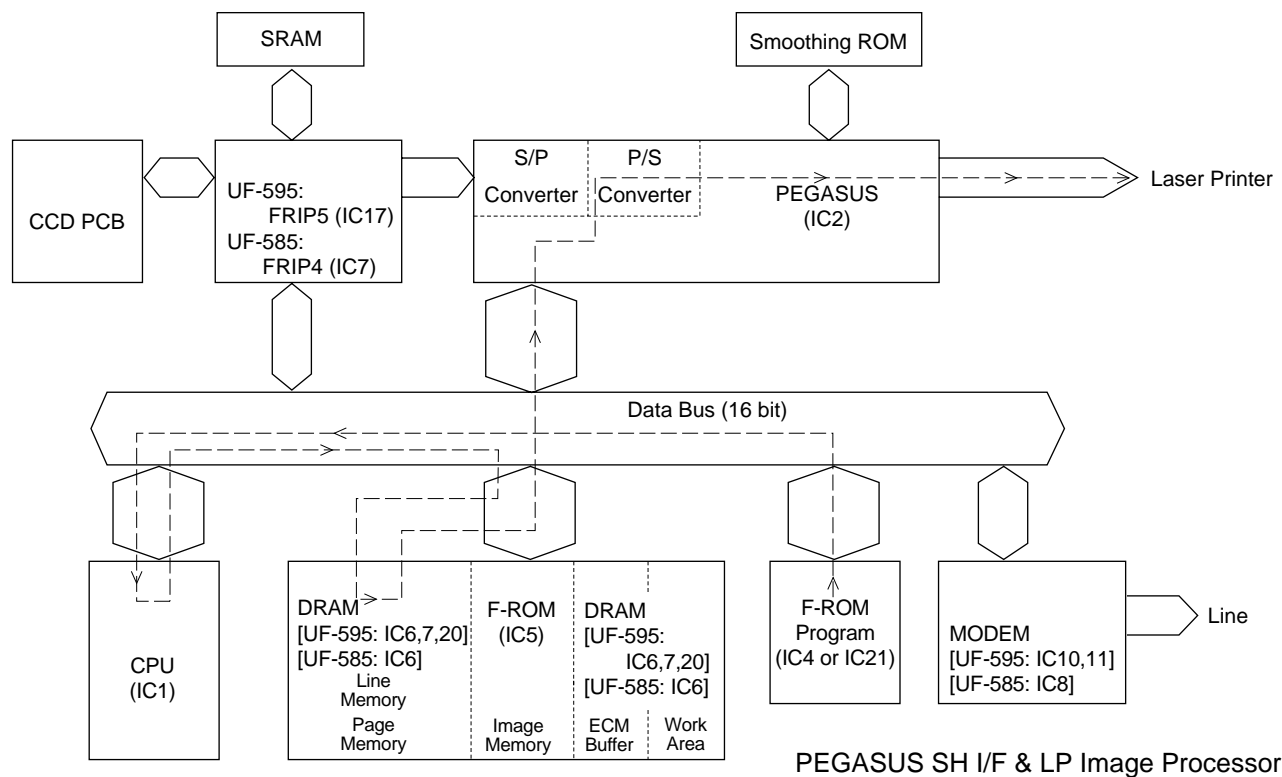
File Print from Memory



Single Copy



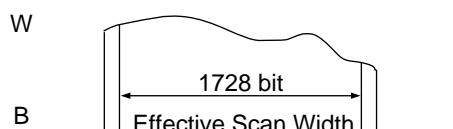
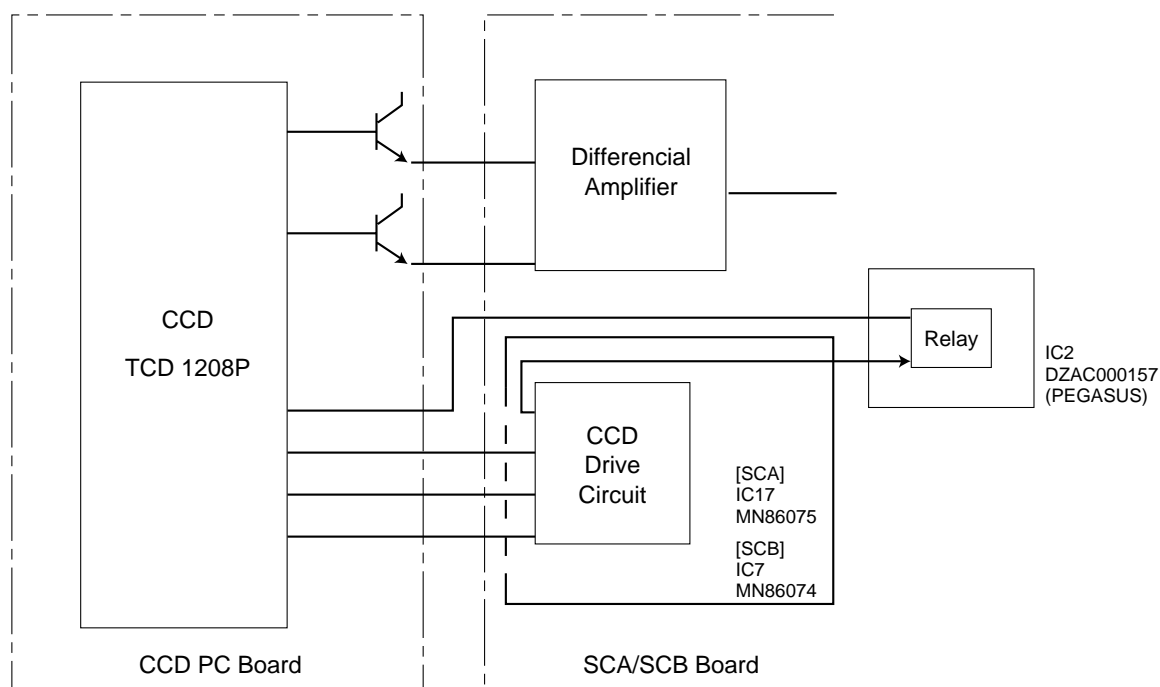
Multiple Copies



Report / List Printing

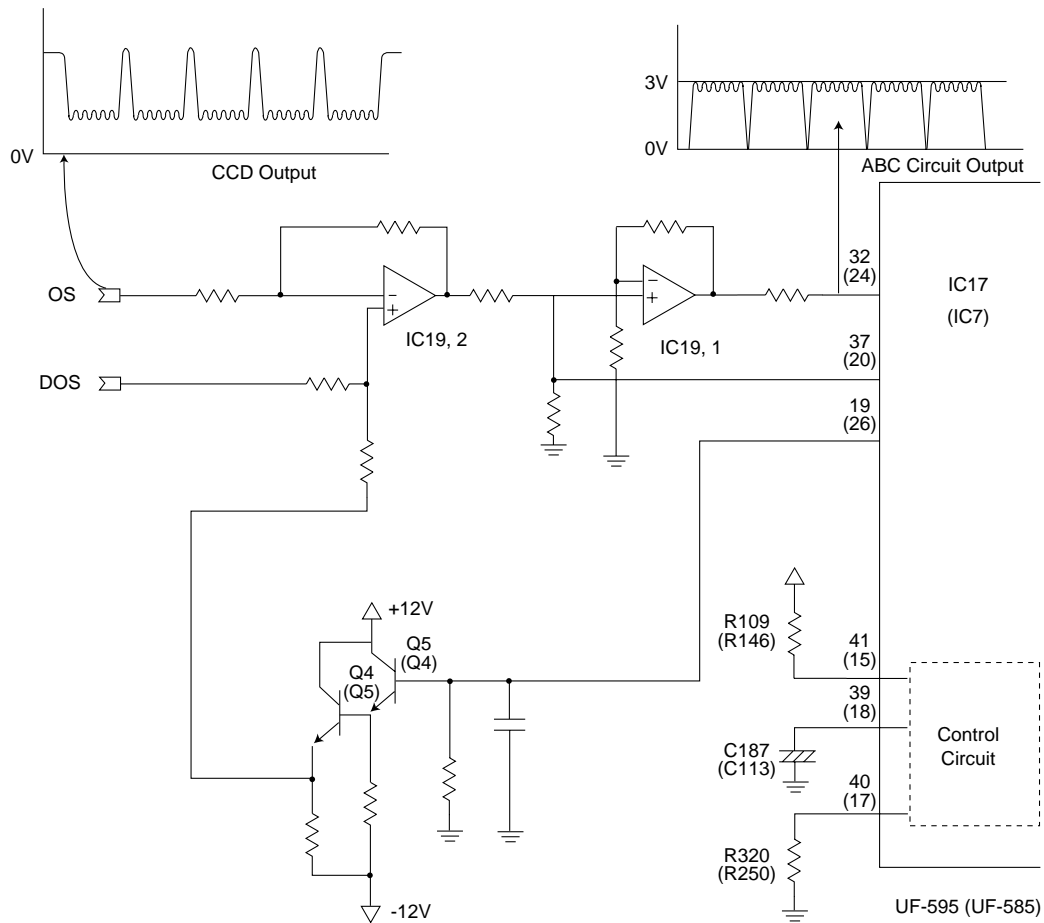
6.2.3 Picture Signal Scanning Block

The image data read by the optical unit is input to the CCD mounted on the CCD PC Board, then transferred to the SCA/SCB PC Board after the optical information is converted into an electrical signal by the CCD. The following shows a block diagram of the picture signal scanning circuit. This picture signal scanning circuit consists of (1) ABC circuit, (2) shading correction circuit, (3) offset control circuit, (4) picture signal binary coding correction circuit and (5) reducing circuit.



ABC Circuit

This circuit consists of IC19, IC17, C187, R109 and R320 (UF-585: IC19, IC7, C113, R146 and R250). Its function is to prevent deterioration of picture quality due to dirt on the document or degrading of the luminous energy of the Xenon Lamp light source. The picture signal from the CCD is amplified in IC19 and input to IC17 (UF-585: IC7), where it is converted from analog to digital and the shading is corrected. When the signal exceeds +5V as the result of this amplification and correction, capacitor C187 (UF-585: C113) is charged through R109 (UF-585: R146). This charging voltage lowers the level of the picture signal input to IC19. When the picture signal voltage rises, this charge voltage becomes higher. When the picture signal level lowers due to the background color, etc., of a transmitting document, the voltage of the charged capacitor C187 (UF-585: C113) is discharged through R320 (UF-585: R250). Consequently, the output of the ABC circuit is kept constant to maintain the picture quality, regardless of changes in the CCD output level.



Shading Correction Circuit

The Shading Correction Circuit, included in IC17 (UF-585: IC7), is provided to correct for reduction in LED lamp intensity around the optical lens and LED lamp intensity distortion due to shading of each bit. This circuit scans the reference white on the transmitting document plate immediately before the document reaches the scanning position and writes a compensation value according to the distortion of the waveform, at the time, into the S-RAM (IC18). When the actual picture signal is input, the circuit corrects the picture signal shading, according to this compensation value. This shading is carried out for each page during transmission or copy.

Offset Control Circuit

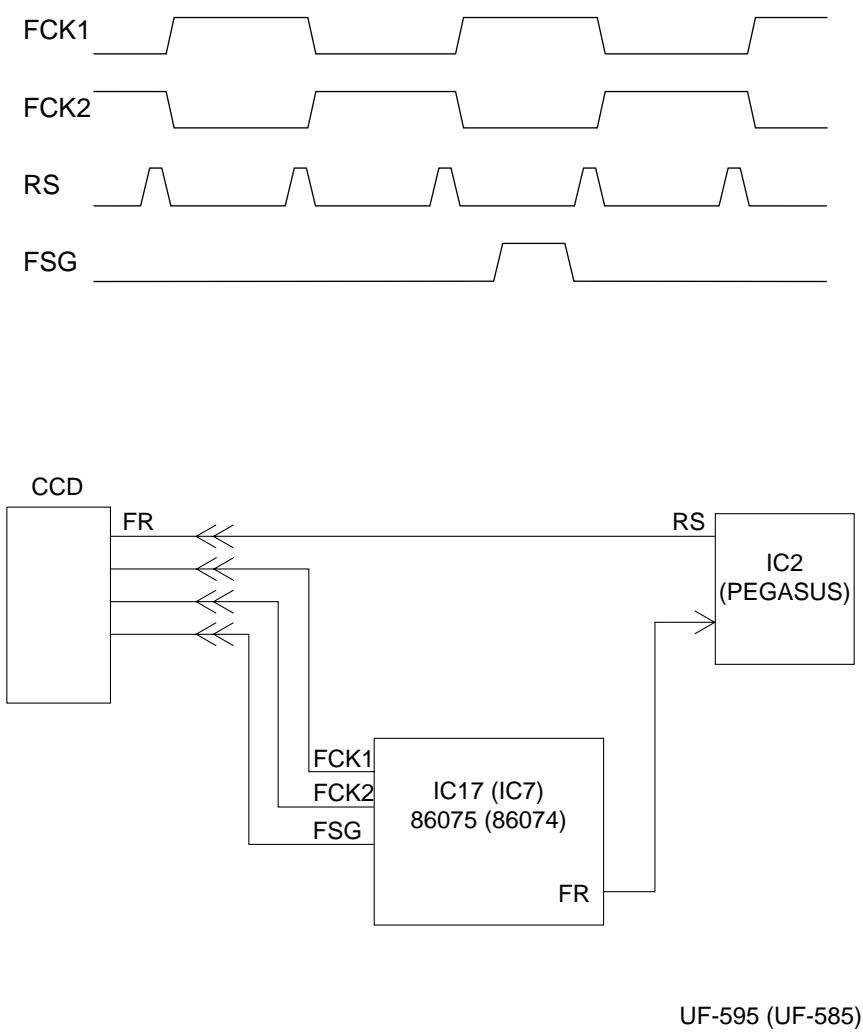
The Offset Control Circuit consists of Q5, Q4, IC17 and IC19 (UF-585: Q4, Q5, IC7 and IC19), and controls the black level of the CCD output to be at 0V by using the input.

Picture Signal Binary Coding Correction Circuit

The Picture Signal Binary Coding Correction Circuit is included in IC17 (UF-585: IC7). It is used to obtain a binary coding signal which is a corrected picture and error diffused signal of a false halftone signal, which is detected from a shaded picture signal.

6.2.4 CCD Drive Clock Generator Circuit

This circuit is also contained in IC17 (UF-585: IC7). Its function is to generate FSG, FCK1, FCK2 and RS clock signals, which are required for driving the CCD. These clock signals are generated by the system clock generator circuit derived from the 4 MHz clock signal that is input to IC9 (UF-585: IC7). Its timing chart is shown below. The FR clock supplied to the CCD is output from the RS of IC2 (PEGASUS). The RS clock of IC2 is derived from the FR clock of IC17 [MN86075] (UF-595: IC7 [MN86074]) generates the timing of the RS clock to drive the CCD.



6.2.5 Picture Quality Control Circuit

This circuit consists of a recording picture control standard cell IC2 [DZAC000157 or "PEGASUS"], an interpolation table ROM (IC3), line memory for interpolating (SRAM) and its peripheral circuitry.

The recording picture control standard cell (IC2) inputs the parallel data from the system bus, conducts picture quality correction (smoothing), reduction, synchronization control, etc., then sends this data to the printer. These functions are as follows:

Picture quality correction circuit (smoothing)

Compares the picture element with 15 surrounding picture elements, determines the interpolation data from the interpolation data ROM, and smooths out diagonal lines, etc., on the recorded picture.

Image range isolation circuit

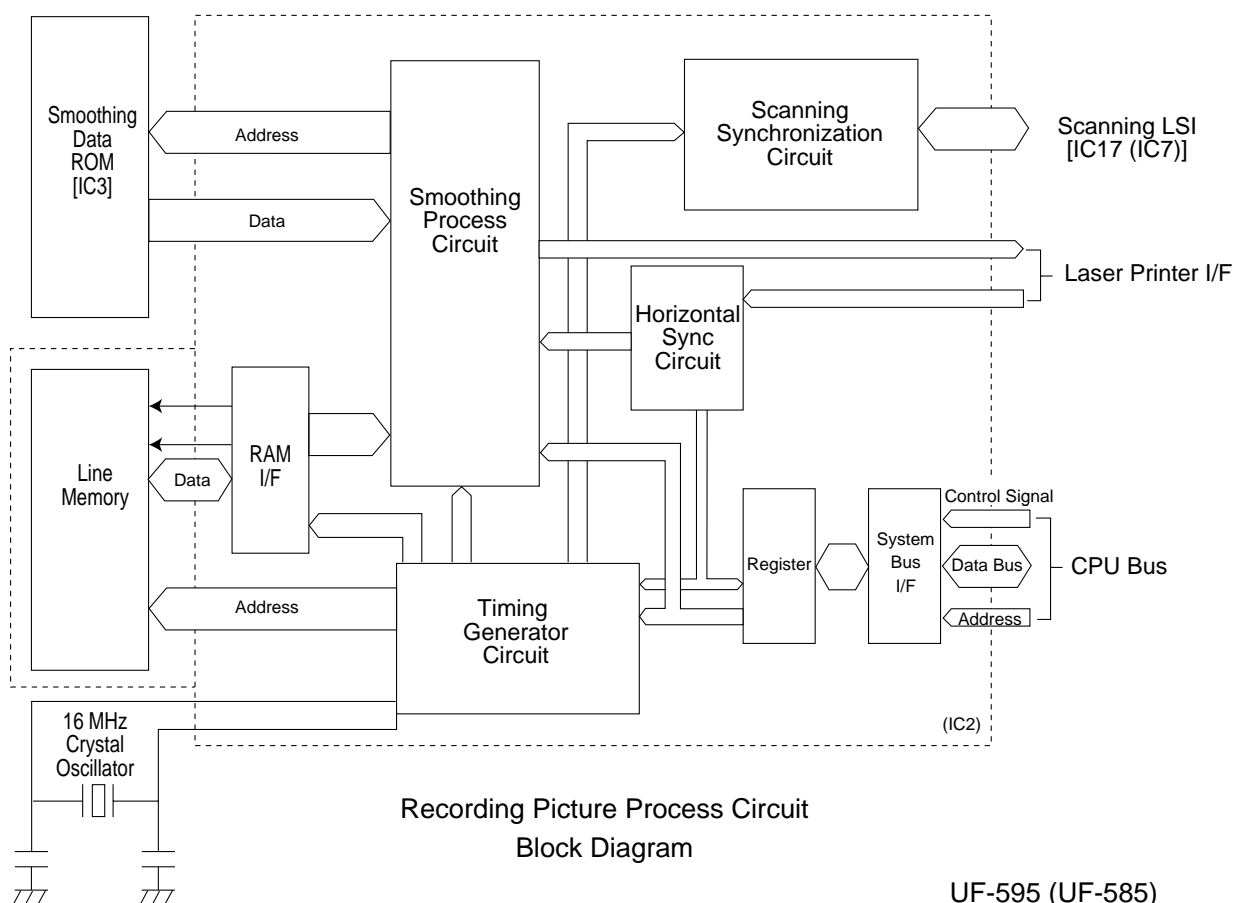
Identifies the halftone picture range and controls smoothing to eliminate blotching of the recording picture which has undergone error diffusion or other processing.

Reduction circuit

This circuit is used to process the received data so that it fits on the recording paper, according to the Fax Parameter settings.

Synchronization control circuit

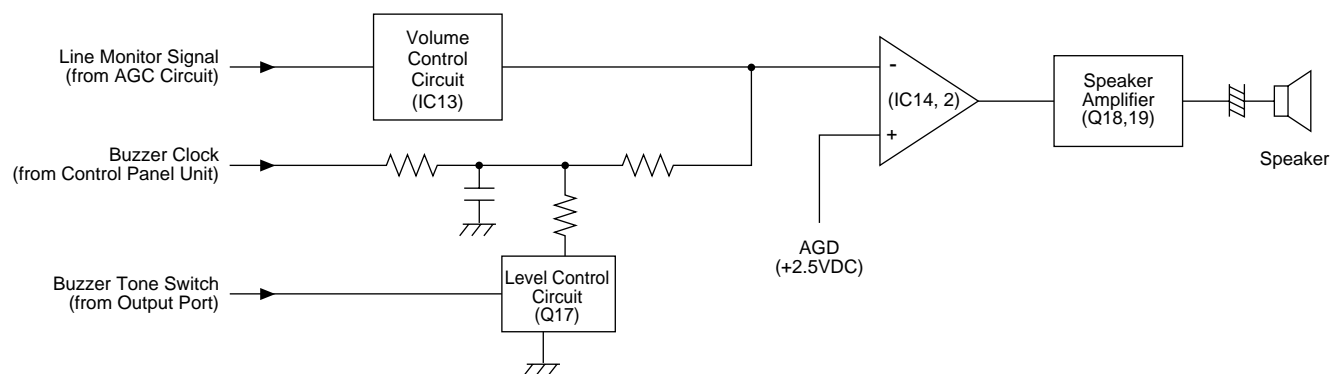
This circuit is used to synchronize the output recorded data with the horizontal synchronizing output signal from the printer for each line. Within a line, it is synchronized with the dot clock signal. The dot clock signal is provided by dividing the crystal oscillator frequency from the Extend Generator Circuit (16 MHz) by 5.



6.2.6 Line Monitor Circuit

The Line Monitor Circuit consists of an operational amplifier (IC14, 2), analog switch (IC13), speaker amplifier (Q18, 19) and its peripheral circuits. Its function is to monitor the dial tone, DTMF tone, response signals, etc. over the speaker. It also sounds the output of the key touch tones, alarm tones, etc. from the panel CPU over the speaker. The received signal from the LCU PCB passes through an AGC circuit (IC14, 1, Q7, Q6) and is then input to the analog switch for volume control. It passes through the operational amplifier (IC14, 2) and is then input to the speaker amplifier (Q18, 19), where it is amplified to a level sufficient to drive the speaker. The volume can be set in 9 steps (including OFF) from the panel.

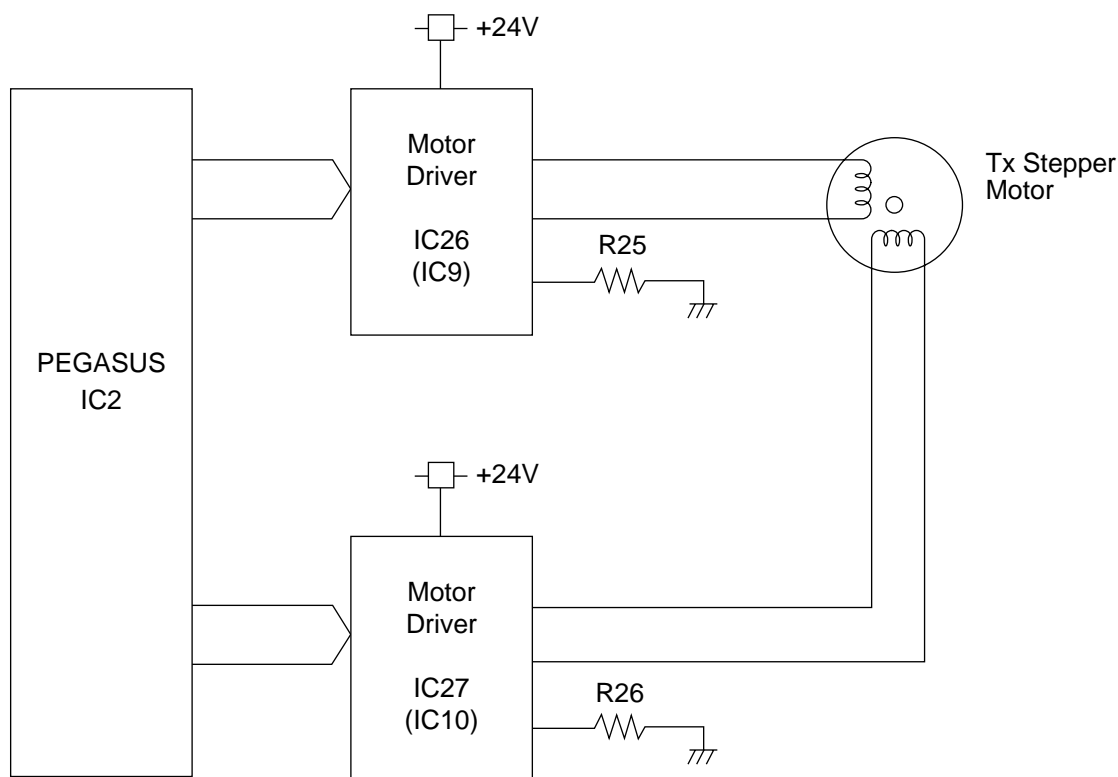
Key touch tone, etc. from the panel are mixed by the operational amplifier (IC14, 2) and input to the speaker amplifier. The key touch tones and alarm tones can be set to one of three levels, High, Low, or Off, with analog switch Q17.



Line Monitor Circuit
Block Diagram

6.2.7 Transmit Motor Control Circuit

The transmit motor is a PM type, two-phase bi-polar motor. The stepping signal and chopping current control signals (pTAPH, pTBPH, pTA10, pTA11, pTB10 and pTB11) are sent to the chopper drive circuit, comprised of IC26, IC27 (UF-585: IC9, IC10) and its peripheral circuitry, from IC2 PEGASUS (Panasonic Engine for Graphic Adaptation System Under the SH: DZAC000157) output port. The motor is powered by +24 VDC and is driven by a 1/2-phase excitation, and greater step division is provided by controlling the phase circuit in steps (micro-step control).

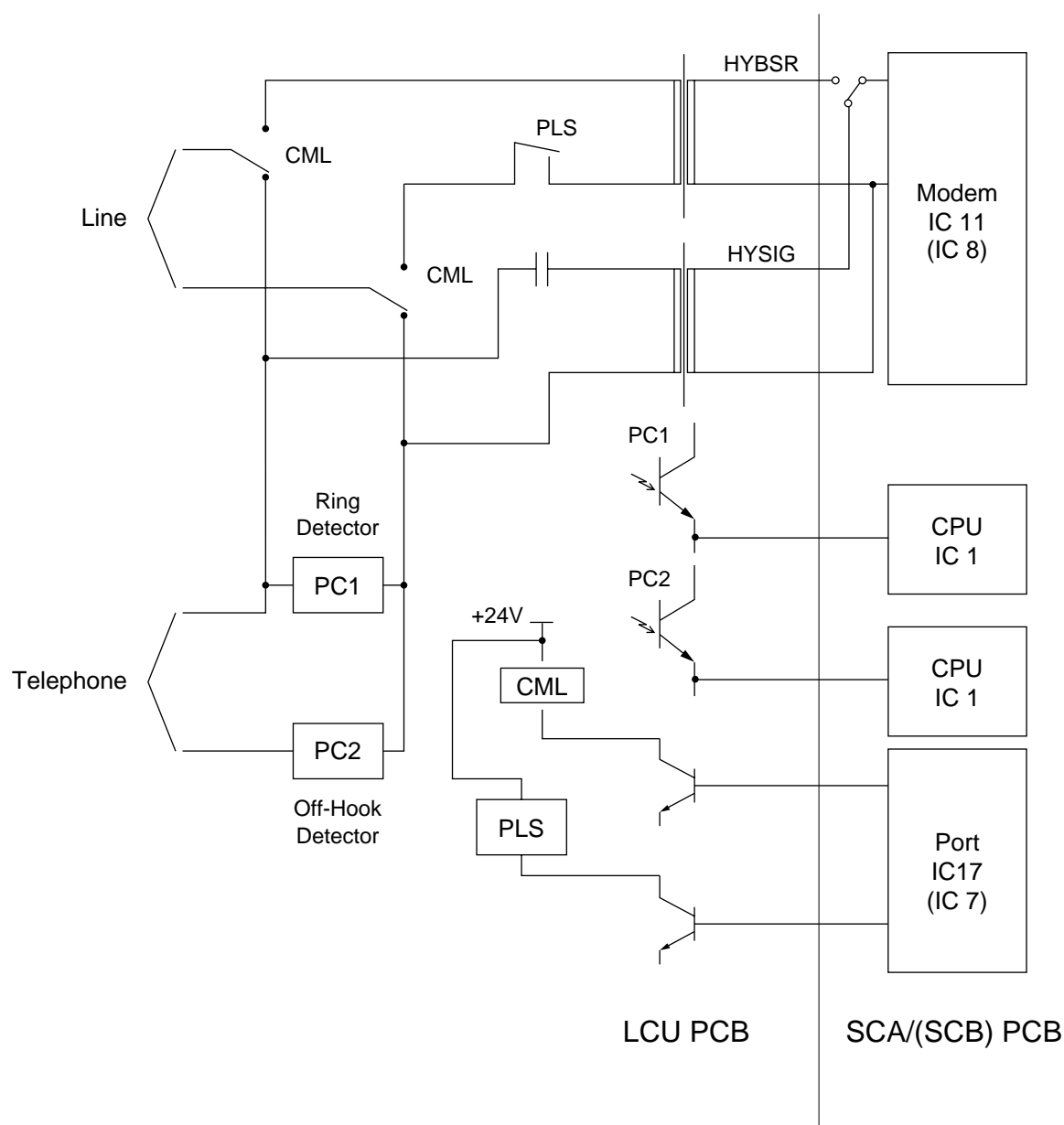


Tx Motor Driver Circuit Block Diagram

UF-595 (UF-585)

6.2.8 Line Control Board

The following shows a block diagram of the Line Control Board.

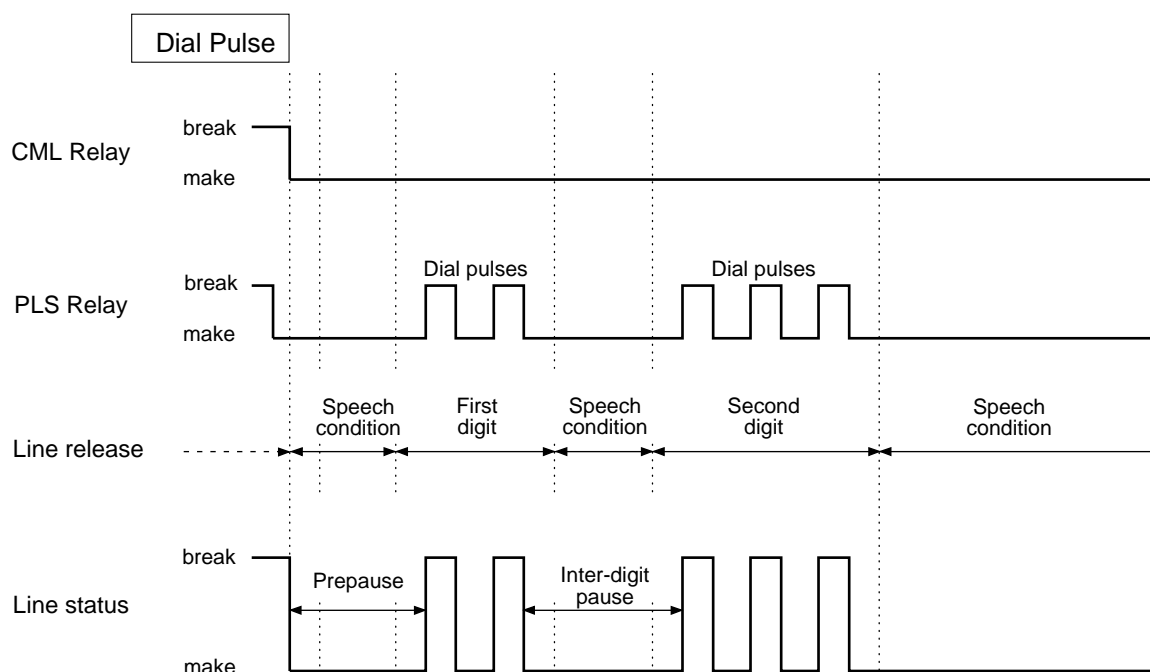


The **Ring Detector** consists of a photocoupler, PC1, and its peripheral circuits. The ringing signal is half-wave rectifier in the Ring Detector, and transferred through the nCTON signal line to the CPU on the SCA/SCB PC Board. The CPU observes the signal to distinguish from signals caused by chattering.

The **Off-Hook Detector (External Telephone)** circuit consists of the photocoupler, PC2, and its peripheral circuits. When PC2 detects loop current flow, it emits a Low active output signal (nHKOF) to the CPU which monitors it for a specified time. If the CPU detects no change in the Low signal level, it determines that the External Telephone is Off-Hook.

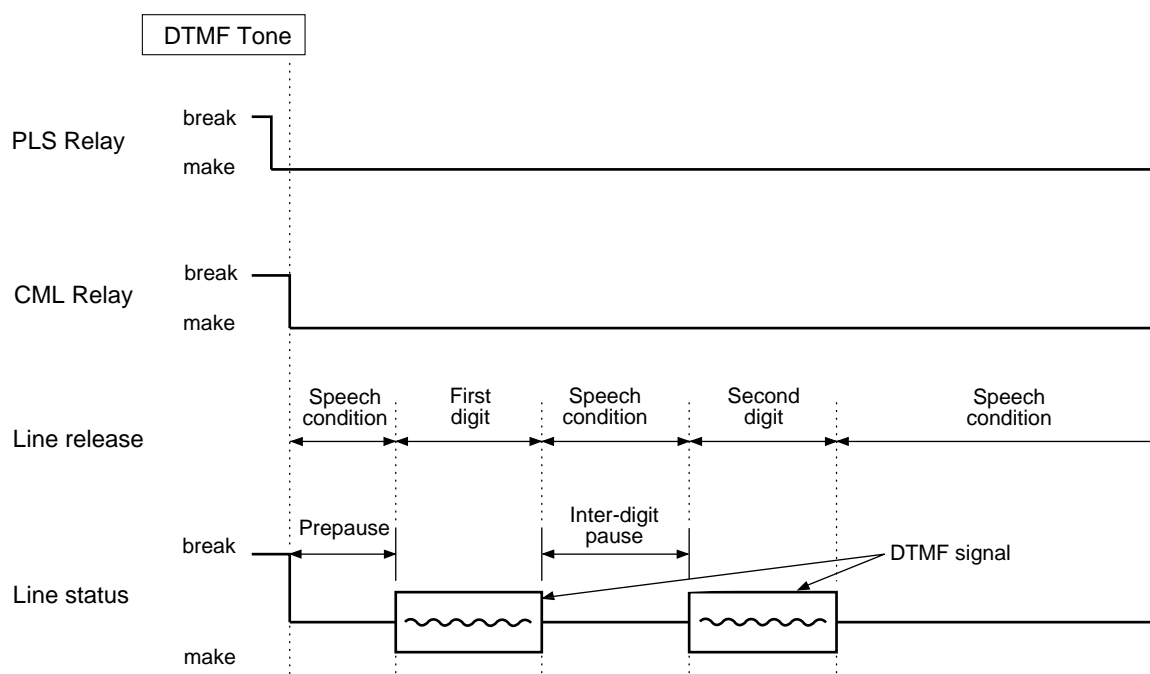
Dial Pulse Generator

The circuit consists of the CML relay, PLS relay and their peripheral circuits. This circuit generates dial pulses. The CPU on the SCA/SCB PC Board controls all dial pulse generation sequences. It turns relay CML and PLS ON and OFF through the MN86075 [IC17] (UF-585: MN86074 [IC7]). The status of the relays during dialing is shown below. When the absence of the terminating message is confirmed by the Off-Hook detector, the CPU turns CML relay ON to develop loop status (DC loop). After a few seconds, the CPU turns the PLS relay On and Off to generate dial pulses, making and breaking the loop.



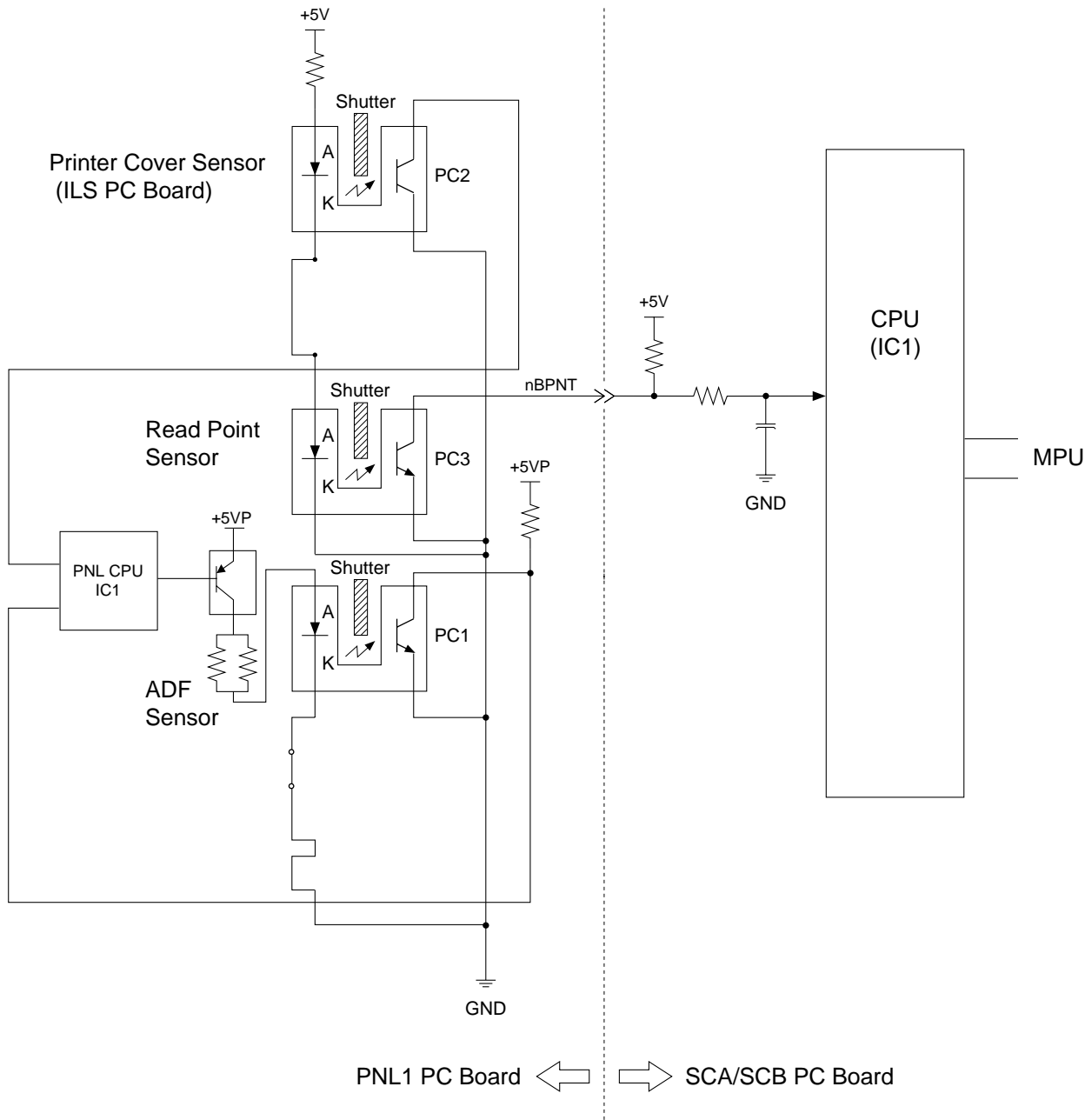
DTMF Tone Generator

The circuit is incorporated in the MODEM on the SCA/SCB PC Board. The DTMF tone is conveyed to the telephone line using the same route as the facsimile signal. The DTMF tone selection is controlled by the CPU. The relay status during dialing is shown below.



6.2.9 SNS PC Board

Each sensor consists of an LED and phototransistor. When documents are placed on the ADF tray or are moving, a shutter in the document sensor opens. The light from the LED turns the phototransistor “ON”, and the output voltage from the sensor becomes a “Low” level. With no document on the ADF tray, the shutter interrupts the light path, and output from the sensor is kept at a “High” level. Operation of the RP Sensor is exactly the same as the ADF Sensor. The Printer Cover Sensor (ILS PC Board) operation is similar, except that the output from the sensor is kept at a “Low” level when the cover is closed and becomes a “High” level when the Printer Cover is opened.



6.2.10 Control Panel

The Control Panel consists of the Display PCB and Panel Unit, which display various status information. It is normally interfaced to the main CPU. Keyed input signals are received by the Panel CPU and the data is transferred to the main CPU on the SCA/SCB PC Board.

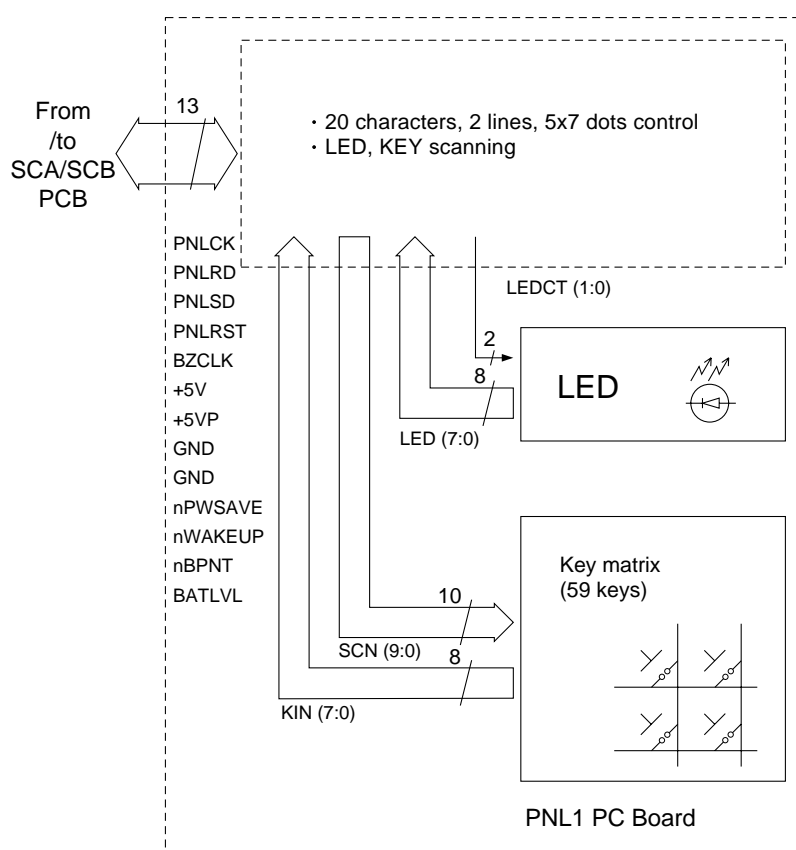
The Control Panel performs the following processes simultaneously:

- Key inputting
- LED, LCD display
- Data transmission / reception

Interface to main CPU

The interfacing between the main CPU and the panel CPU are all executed with commands and responses in the following two formats:

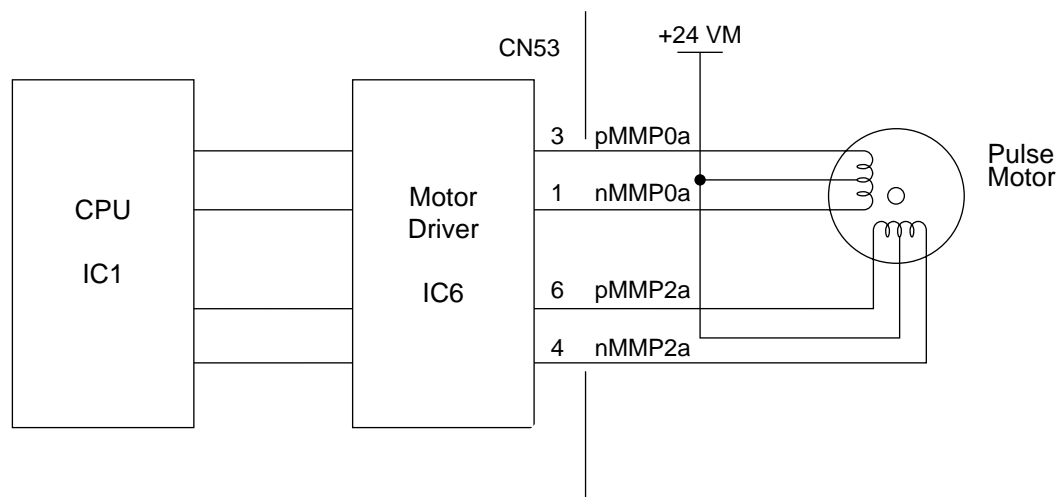
- Command / response (1 byte) + number of data + check sum
- Command / response (1 byte) + number of data + data 1 + data 2 + data n + check sum.



6.2.11 Printer Motor Drive Circuit

Motor Drive Circuit

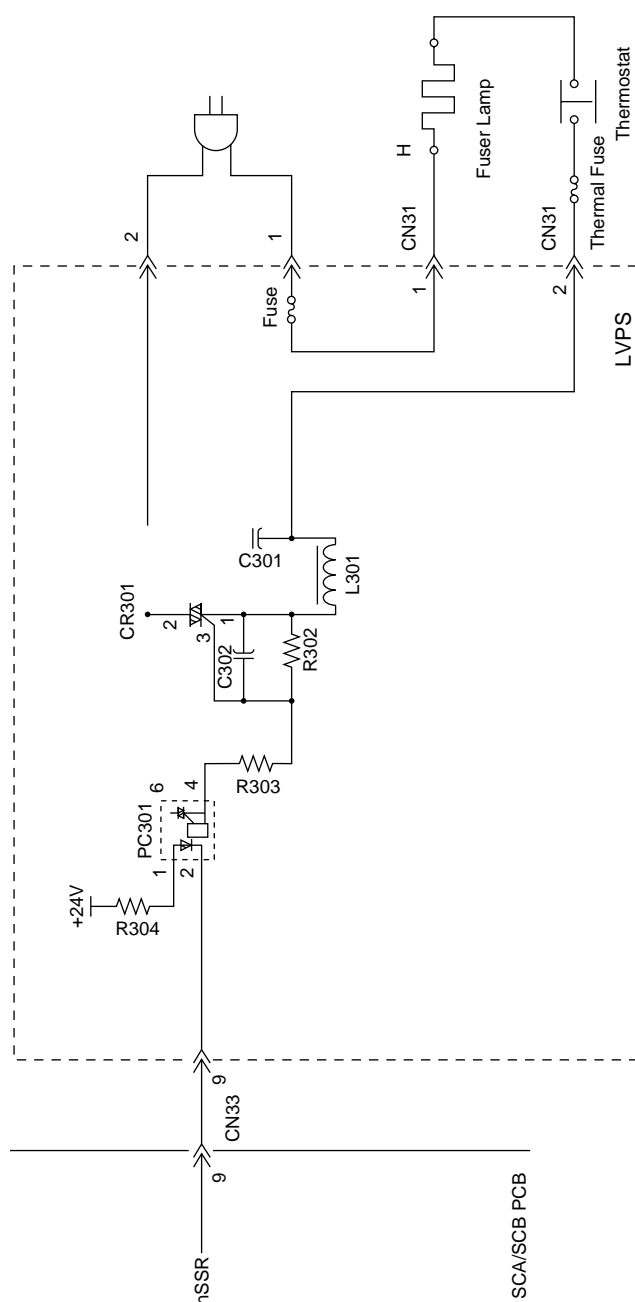
The Printer Motor is a 4-phase uni-polar PM-type step motor. The step signals (pMMP0A to pMMP3A) are transmitted to IC6 (the Chopper Drive Circuit) by means of a CPU with real-time output function. The chopper current is determined by the voltage at IC6, Pin3 and Pin13. The Printer Motor has two speeds, Slow and Constant. The Printer Motor is powered by a +24 VDC supply. When the interlocks are open, the +24 VDC supply is cut off and the Printer Motor stops rotating.



Laser Printer Motor Drive Circuit Block Diagram

Fuser Lamp Drive Circuit

The Fuser Lamp is powered by 115 VAC. It is driven by the LVPS and controlled by the nSSR signal from the SCA/SCB PC Board. When the CN33, Pin10 (nSSR) on the LVPS goes LOW, the Fuser Lamp turns ON. This lights up the PC301 LED and activates the CR301 photo-triac, and VAC 115 VAC is sent to the Fuser Lamp. The time at which CR301 is actually activated depends on the VAC 115 VAC sine wave. When the cross-voltage for Pin 6 and Pin 4 of PC301 is other than 0 Volts (sine wave exceeds 0 volts), PC301 inhibits the activation of the triac and turns ON the Fuser Lamp.

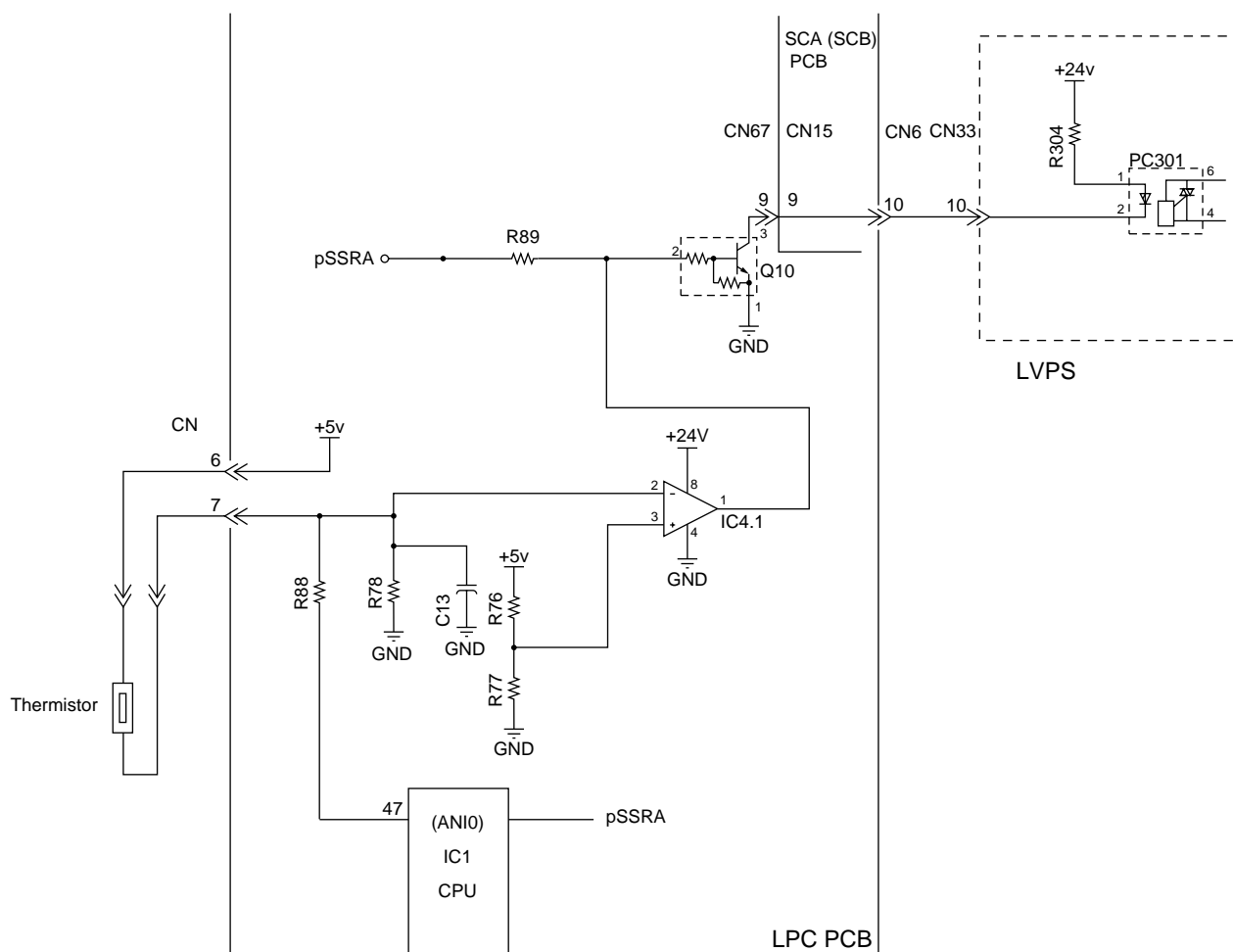


Fuser Lamp Drive Circuit Diagram

Fuser Temperature Control Circuit

The fuser temperature is controlled by IC1 on the LPC PC Board, which contains A/D (Analog/Digital) converters ANI0 and ANI7. The Fuser Temperature Control Circuit uses A/D converter, ANI0. When the PC301 drive current is transmitted from the LPC PC Board to the LVPS, the Fuser Lamp turns ON. IC4 is a comparator with open output at pins 1 and 7 and is used as an abnormal temperature detection circuit. IC4, pin 1, has a high impedance when Q10 is activated, turning ON the Fuser Lamp. An abnormal temperature is detected when the VTH voltage level becomes higher than V+, forcing IC4, 1, pin 1 Low and deactivating Q10.

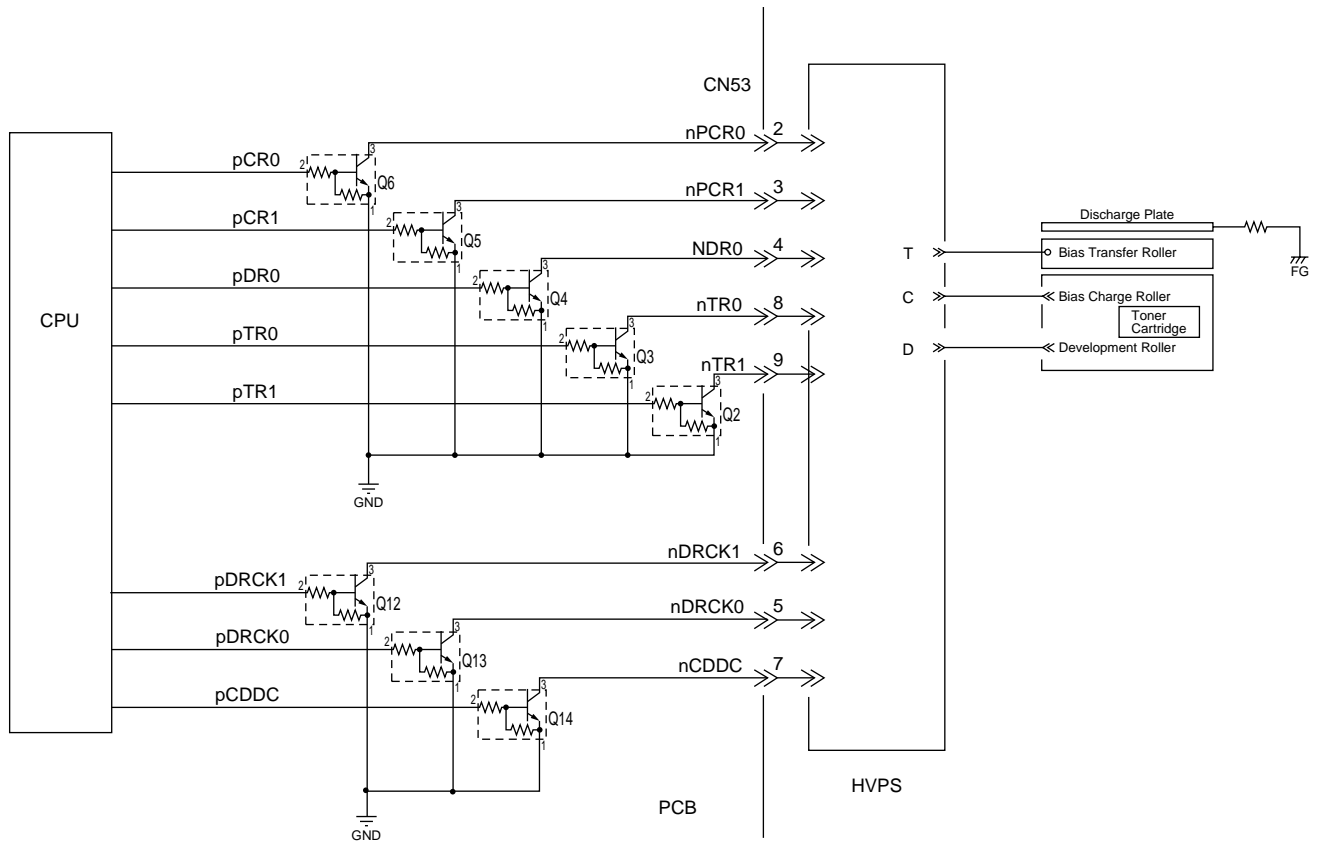
Abnormally low and high temperatures, as well as Thermistor release status, are detected by IC1 (CPU) programming.



Fuser Temperature Control Circuit Diagram

High Voltage Drive Circuit (Charging, Development and Transfer)

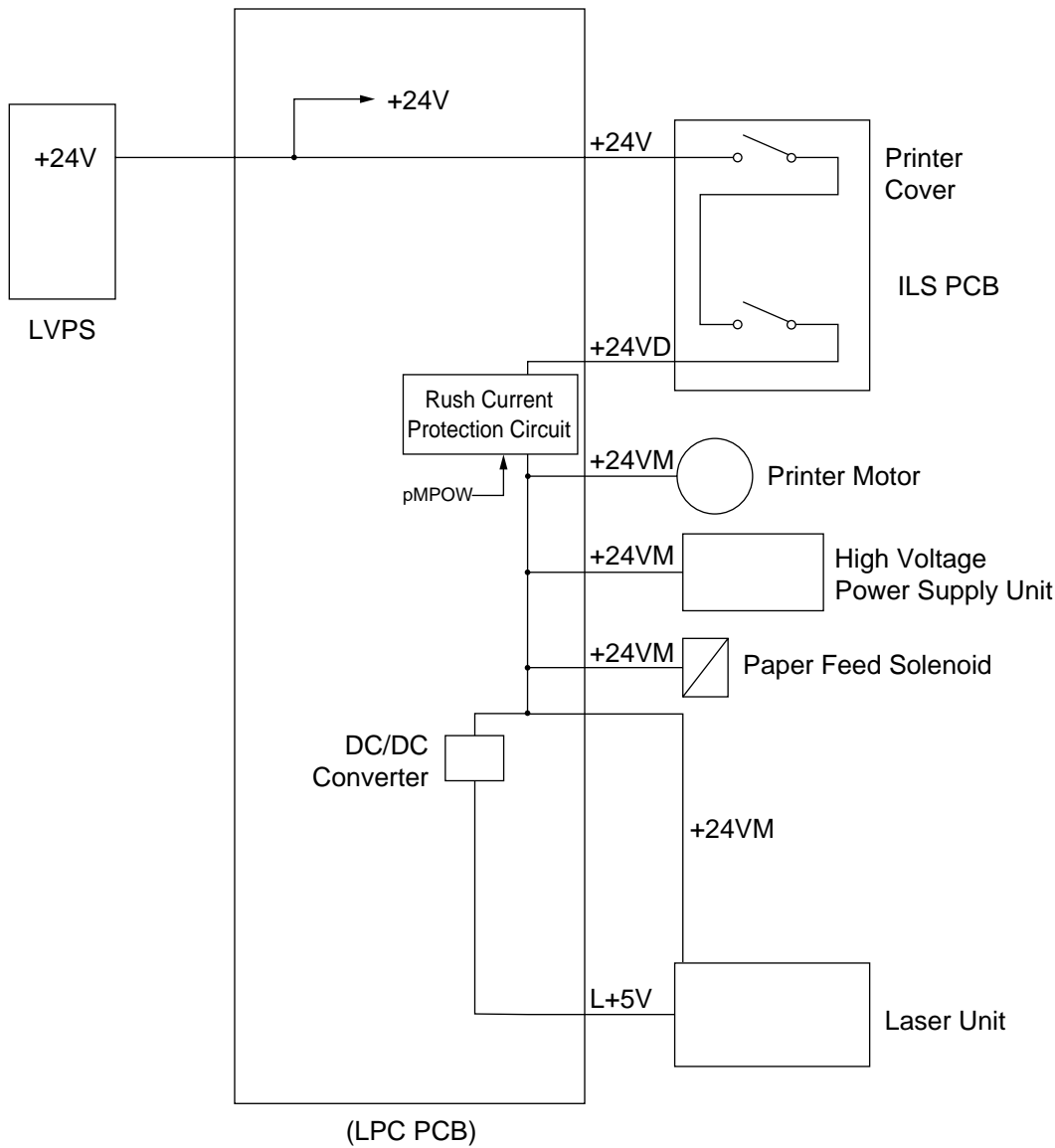
High Voltage is provided through a DC to DC converter, which changes the +24 VDC supply voltage to -650 VDC, and output approximately 0.64 KVAC (Steady current: 220 μ A) for the Charging Block. The Developer Circuit converts the +24 VDC to between -300 VDC for the development bias, and outputs 1,500 VAC(p-p) at a frequency of 1.875 kHz to charge the toner. The Transfer Circuit changes the +24 VDC supply voltage to approximately +280 VDC (MAX) (steady current: 2.5 μ A/-1500 VDC steady voltage).



High Voltage Drive Circuit

6.2.12 Interlock Safety Circuit

This safety circuit turns OFF the +24 VDC supply voltages when the Printer Cover is opened. When the Printer Cover is opened, the microswitch(es) on the ILS PC Board are de-actuated, turning OFF +24 VDC to the Printer Drive Circuit, the High Voltage Power Supply, and the Paper Feed Solenoid Circuits, turning OFF the +5 VDC supply voltage for the Laser Driver circuits, on the Laser Unit.



Interlock Safety Circuit Block Diagram

6.2.13 Laser Unit (LSU) Control Circuit

The laser control signals are described below.

nLDON

The LSU is activated when this output signal is LOW. If an error occurs, the nLDON output signal level goes High and the LSU is deactivated.

nVIDEO

This is the actual Data Signal. The Laser is ON when the nVIDEO output signal level is LOW.

nHSYNC

This horizontal synchronization signal transmitted from the Beam Detection Sensor sets the horizontal position of the laser beam as it crosses the OPC Drum.

nPMON

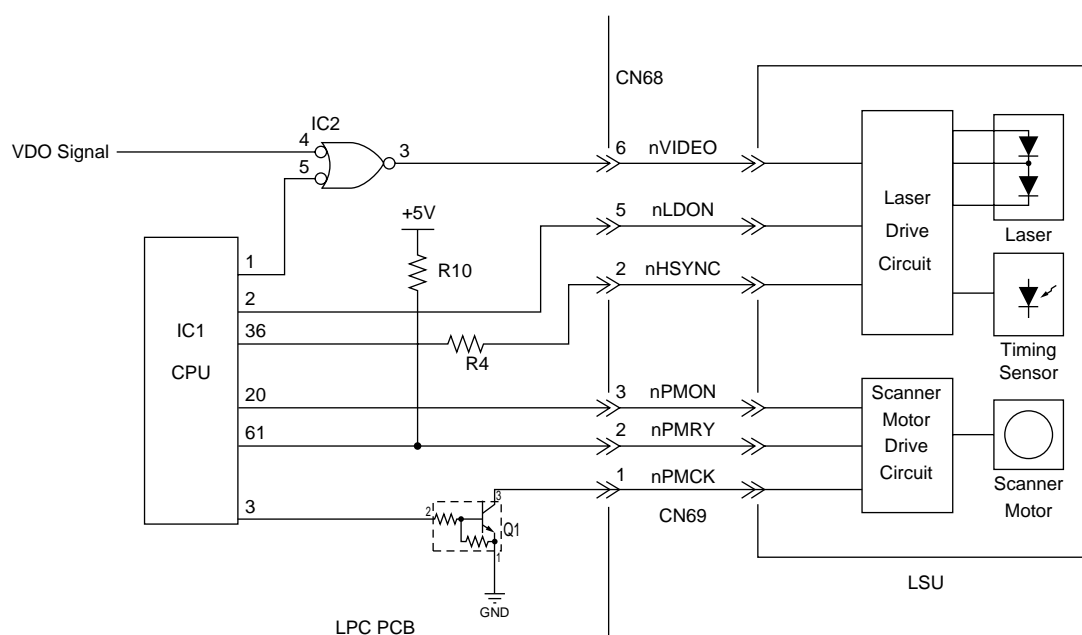
This is the Scanner Motor Control Signal. The Scanner Motor rotates when the nPMON output signal level is LOW.

nPMRDY

A Phased-Lock Loop (PLL) circuit keeps the Scanner Motor speed constant when the nPMRDY is at a Low output signal level.

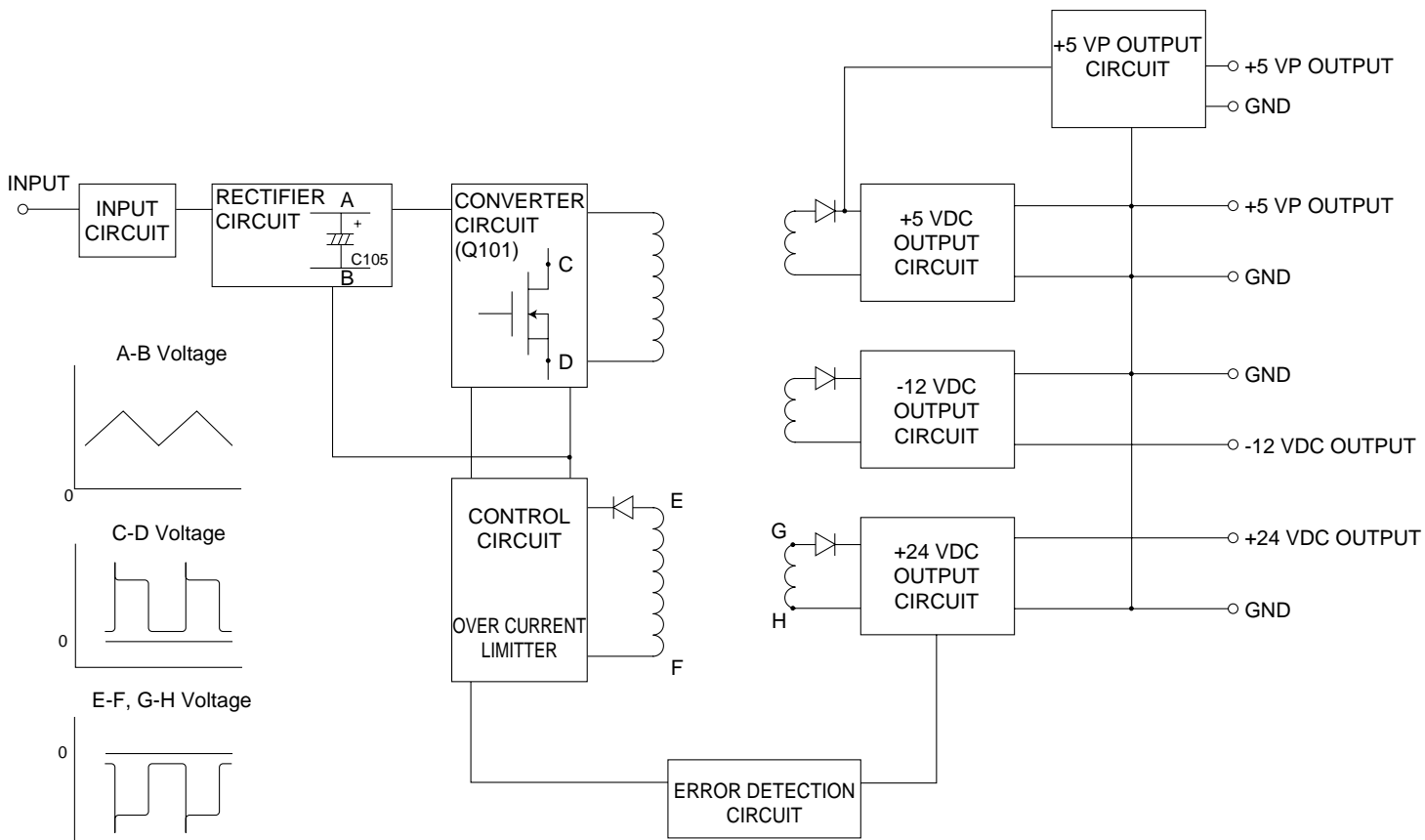
nPMCK

This is the Scanner Motor Clock.



Laser Unit Control Circuit Block Diagram

6.2.14 Power Supply Unit (LVPS)
Block Diagram of ETXDN200A4D



ETXDN200A4D (115V)**Input Circuit**

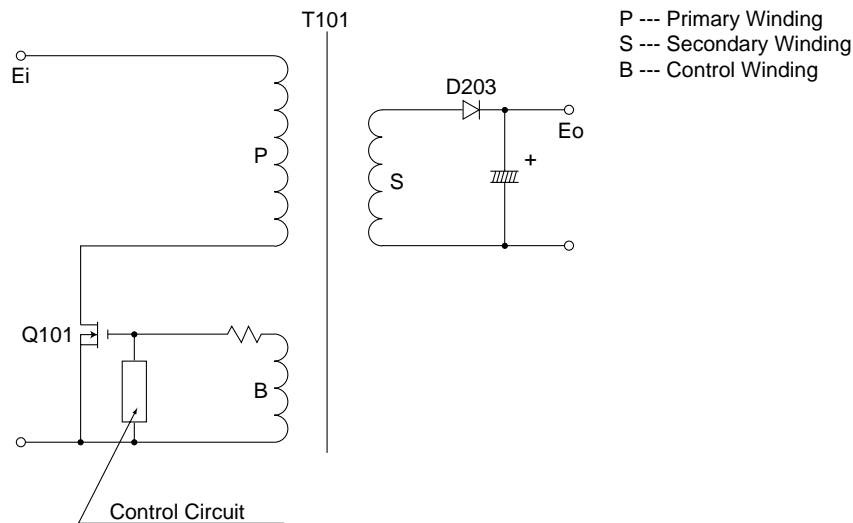
AC line voltage travels to the rectifying circuit through the line filter. The line filter eliminates RFI noise which may otherwise pass to the AC line from the power supply unit. It also protects the power supply unit from transient noise which may pass into the unit from the AC line.

Rectifying Circuit

AC power is rectified by D101 and charges C105 to make high DC voltage, then supply power to converter circuit. Kick-on voltage for control IC (IC101) is supplied AC power through R103 and R110. Inrush current is limited by TH101.

Converter Circuit

A hybrid IC (IC101), in combination with transformer T1, form a switching power supply circuit using the RCC (Ringing Choke Converter) system. As soon as power is applied to the Power Supply Unit, AC line voltage is rectified by D101 and is smoothed by capacitor C105. The protection circuit at the time of start-up is controlled by an IC (IC101) and resistors R103 and R110.

**Main Switching Circuit**

In the above circuit, when the main switching transistor, Q101, is turned On, input voltage, Ei, is supplied to the primary winding of transformer T101. However, no current will flow through diode D201 of the secondary side, due to reverse polarity of the secondary winding causing no current flow within T1. But the transformer charges with energy. When Q101 is turned Off, the supply voltage to the primary winding shuts off and the windings of T101 change polarity, allowing D201 to conduct, releasing the energy accumulated in T101 to the circuit. When the energy is discharged through D201, Q101 turns on, once again reversing the polarity on T101 windings, creating a self-oscillation circuit.

The value of output voltage is

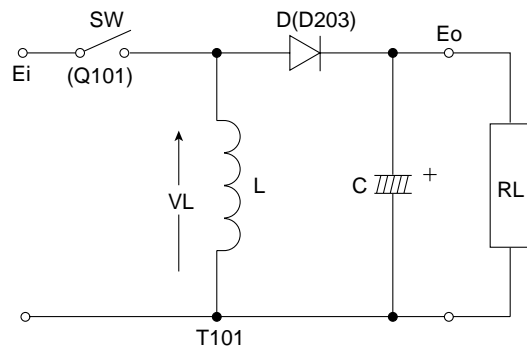
$$E_o = d/(1-d) \cdot E_i$$

$$d = T_{on}/T_s$$

Equivalent circuit model for the RCC.

T_{on} : ON time of Q102

T_s : Period of oscillation



In the equivalent circuit ; When SW is ON, current flows

$$SW \rightarrow L$$

When SW is OFF, current flows

$$L \rightarrow D \rightarrow RL$$

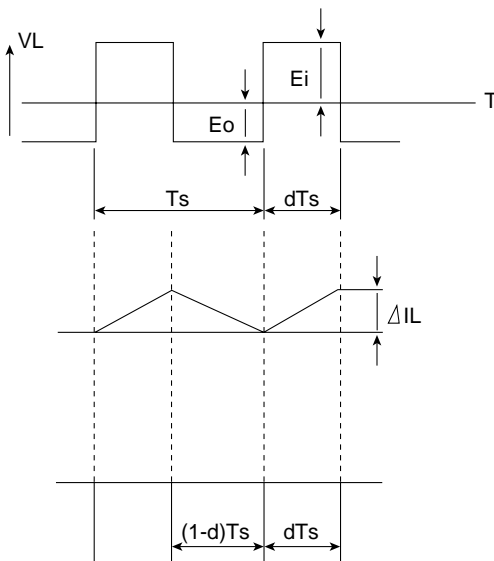
The value of inductance increase current between ON period. ($d \cdot T_s$)

$$I_L = E_i/L \cdot d \cdot T_s \dots \dots \dots (1)$$

The value of inductance decrease current between OFF period. ($(1-d) \cdot T_s$) $\dots \dots \dots (2)$

From equation (1) and (2),

$$E_o = d/(1-d) \cdot E_i$$



In the actual circuit, the fixed output voltages are obtained by changing the winding ratio of transformer T101. In this converter circuit, the output voltages are stabilized by controlling the duty cycle of the ON and OFF timing of the transistor. In this power supply, the bias winding is built into the transformer. The power supply has four outputs, +24 VDC, -12 VDC, +5 VP and +5 VDC. The +24 VDC output is protected by the Error Detection Circuit, and the +5 VP and -12 VDC outputs are protected by the circuitry inside of the voltage regulator IC, +5 VDC is protected by ZD251.

Control Circuit and Error Detection Circuit

The control circuit amplifies the output of the duty cycle according to the error voltage detected by the Error Detection Circuit, and drives the main transistor Q101. The method used to change the duty cycle is to change the ON time period. When the output voltage of the +24 VDC circuit rises, the current of photocoupler PC101 increases, the output pulse width of the control circuit decreases and the ON time period of Q101 decreases. This control circuit decides the minimum OFF time period by itself. When the oscillation frequency becomes higher and the OFF time period becomes minimum, the OFF time period remains unchanged and only the ON time period decreases. This way, there is a upper limit of the oscillation frequency and the duty cycle is expanded.

Over Current Limiter (O.C.L)

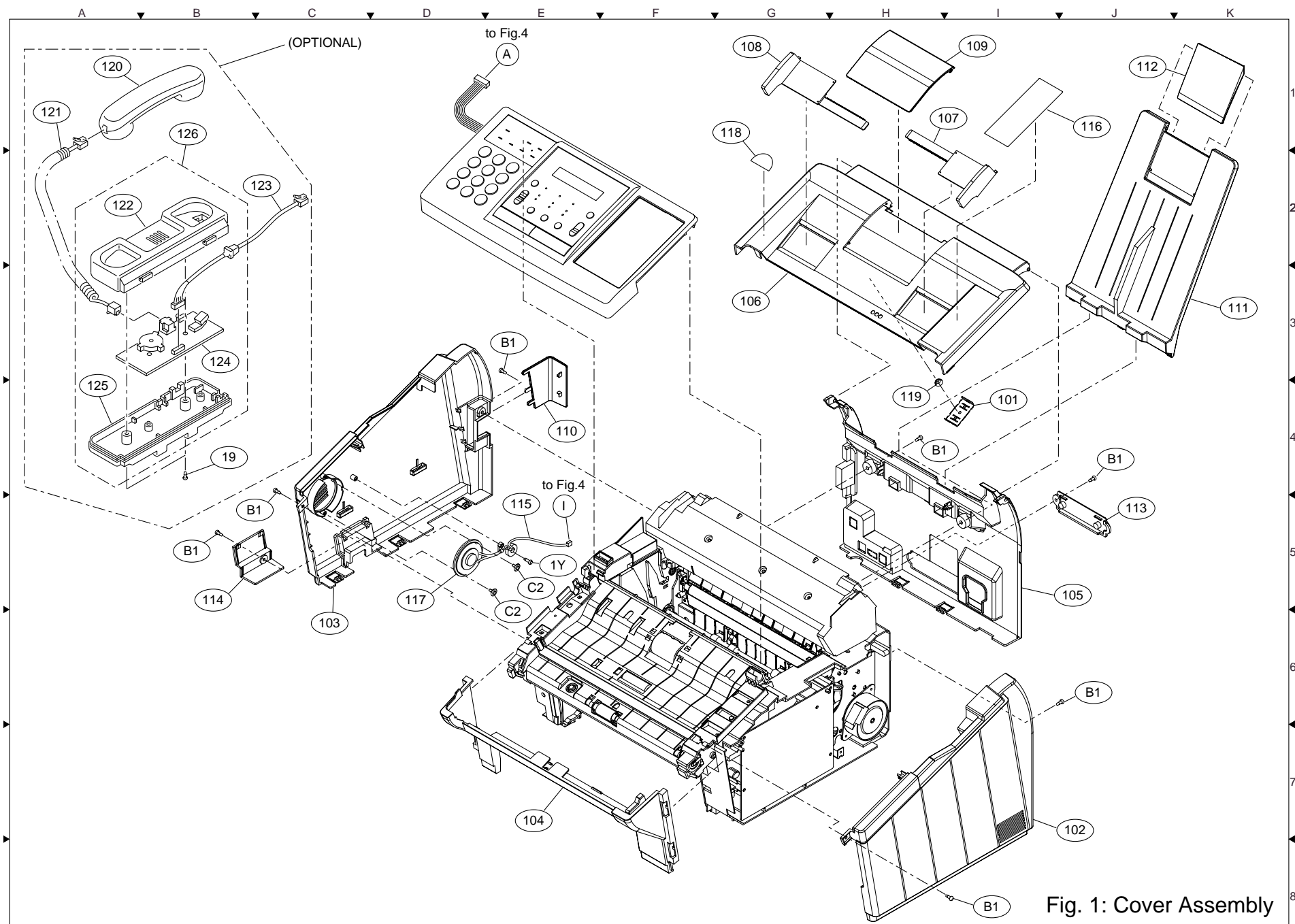
The +24 VDC output is limited by Ton MAX Limiter (ON time period of transistor Q101) which is part of the control circuit. The +5 VP, -12 VDC and +5 VDC outputs have over current limiters provided inside the voltage regulator and IC251.

7 Exploded View & Parts List

7.1 Cover Assembly

AU=U.S.A. AC=Canada

Ref No.	Safety Mark	Part No.	Part Name	AU		AC		Location
				UF-585	UF-595	UF-585	UF-595	
101	-	DZKP000166	Spring Plate, Doc. Guide	1	1	1	1	4I
102	-	DZMC000525	Cover, Right	1	1	1	1	7J
103	-	DZMC000527	Cover, Left (UF-585)	1	-	1	-	6C
	-	DZMC000566	Cover, Left (UF-595)	-	1	-	1	6C
104	-	DZMC000529	Cover, Front	1	1	1	1	7E
105	-	DZMC000531	Cover, Rear	1	1	1	1	5J
106	-	DZML000289	Cover, Printer	1	1	1	1	3G
107	-	DZML000291	Document Guide, Right	1	1	1	1	1I
108	-	DZML000293	Document Guide, Left	1	1	1	1	1G
109	-	DZML000295	Sub Tray, Document	1	1	1	1	1I
110	-	DZMC000533	Cover, Memory Card	1	1	1	1	4E
111	-	DZML000297	Tray, Recording Paper	1	1	1	1	3K
112	-	DZML000299	Sub Tray, Recording Paper	1	1	1	1	1J
113	-	DZMC000563	Cover, Parallel Port I/F	1	1	1	1	5J
114	-	DZMC000567	Cover, Connector Access	-	1	-	1	5B
115	-	DZFP000723	Harness, SCA/SCB-SPK	1	1	1	1	5E
116	-	DZNK001918	Label, Function	1	1	1	1	1J
117	-	DZDR000014	Speaker	1	1	1	1	5D
118	-	DZNK000550	Label, Energy Star	1	1	1	1	1G
119	-	DZLF000180	Gear, B14	1	1	1	1	4H
120	-	DZDU000025	Handset	1	1	1	1	1A
121	-	DZFN000066	Cord, Handset	1	1	1	1	1A
122	-	DZJE000165	Cradle, Upper	1	1	1	1	2A
123	-	DZFN000061	Cord, Cradle	1	1	1	1	2C
124	-	DZEC100422	PC Board, SRU	1	1	1	1	3B
125	-	DZJE000166	Cradle, Lower	1	1	1	1	4A
126	-	DZML000132	Cradle Assembly	1	1	1	1	1B
B1	-	DZPB000007	Screw	1	1	1	1	5B, 3E, 4H, 4J, 6J, 8I
C2	-	DZPB000020	Screw	1	1	1	1	5E
1Y	-	XTB3+10J	Screw	1	1	1	1	5E
19	-	XTB3+8J	Screw	1	1	1	1	4B



7.2 Control Panel

AU=U.S.A. AC=Canada

Ref No.	Safety Mark	Part No.	Part Name	AU		AC		Location
				UF-585	UF-595	UF-585	UF-595	
201	-	DZJB000106	Chassis, Control Panel	1	1	1	1	6K
202	-	DZJC000216	Holder, Separation Rubber	1	1	1	1	3K
203	-	DZKL000023	Lever, ADF Adjustment	1	1	1	1	5K
204	-	DZKP000164	Spring, Plate	1	1	1	1	3J, 3K
205	-	DZKR000016	Spring, Wire	1	1	1	1	4G, 6G, 8J
206	-	DZLA000176	Roller, Eject Pinch	1	1	1	1	7I
207	-	DZJN000001	Rubber, Separation	1	1	1	1	4K
208	-	DZKP000179	Ground Plate, Control Panel	1	1	1	1	7K
209	-	DZGT000023	Brush, Antistatic	1	1	1	1	8J
210	-	DZMG000025	Latch, Stopper	1	1	1	1	3H
211	-	DZMC000523	Cover, Control Panel (UF-585)	1	-	1	-	3F
	-	DZMC000569	Cover, Control Panel (UF-595)	-	1	-	1	3F
212	-	DZKB000521	Key, Start	1	1	1	1	5A
213	-	DZKB000522	Key, Copy	1	1	1	1	5A
214	-	DZKB000523	Key, Stop	1	1	1	1	4B
215	-	DZKB000524	Key, A	1	1	1	1	4A
216	-	DZKB000525	Key, B	1	1	1	1	3A
217	-	DZKB000526	Key, C	1	1	1	1	4A
218	-	DZKB000527	Key, D	1	1	1	1	4A
219	-	DZNA000522	Plate, LCD Window	1	1	1	1	1E
220	-	DZNA000523	Sheet, Panel	1	1	1	1	1C
221	-	DZNA000524	Cover, Directory Sheet	1	1	1	1	1G
222	-	DZNA000525	Sheet, One-Touch	1	1	1	1	2H
223	-	DZJC000229	Holder, LCD	1	1	1	1	6F
224	-	DZHC000091	Actuator A (ADF Sensor)	1	1	1	1	7B
225	-	DZHC000092	Actuator B (Read Point Sensor)	1	1	1	1	8C
226	-	DZHC000093	Actuator, ADF Door	1	1	1	1	7A
227	-	DZJC000230	Holder, Actuator A	1	1	1	1	7B
228	-	DZJC000231	Holder, Actuator B	1	1	1	1	7C
229	-	DZJC000232	Holder, ADF Door Actuator	1	1	1	1	6A
230	-	DZJC000234	Holder, Battery	1	1	1	1	2F
231	-	DZEC101103	PC Board, PNL1	1	1	1	1	8D
232	-	DZFP000721	Harness, SCA/SCB-PNL	1	1	1	1	5D
233	-	DZDA000025	LCD Unit	1	1	1	1	5F
234	-	CR2032	Battery, Lithium	1	1	1	1	2E
235	-	DZKG000018	Shaft 2, Roller	1	1	1	1	5F
236	-	DZLA000058	Roller, Feed Pinch	1	1	1	1	4F
237	-	DZJC000113	Plate, Separator Pressure	1	1	1	1	4I
238	-	DZJM000104	White Seal	1	1	1	1	8I
239	-	DZMG000018	Latch	1	1	1	1	6G, 8J
240	-	DZKB000145	Ten Key	1	1	1	1	1A
241	-	DZKR000015	Wire Spring, Pressure Plate	1	1	1	1	3I
242	-	DKKR000018	Wire Spring, Latch	1	1	1	1	6G, 7J
19	-	XTB3+8J	Screw	1	1	1	1	8K
7B	-	XTB26+6J	Screw	1	1	1	1	8E

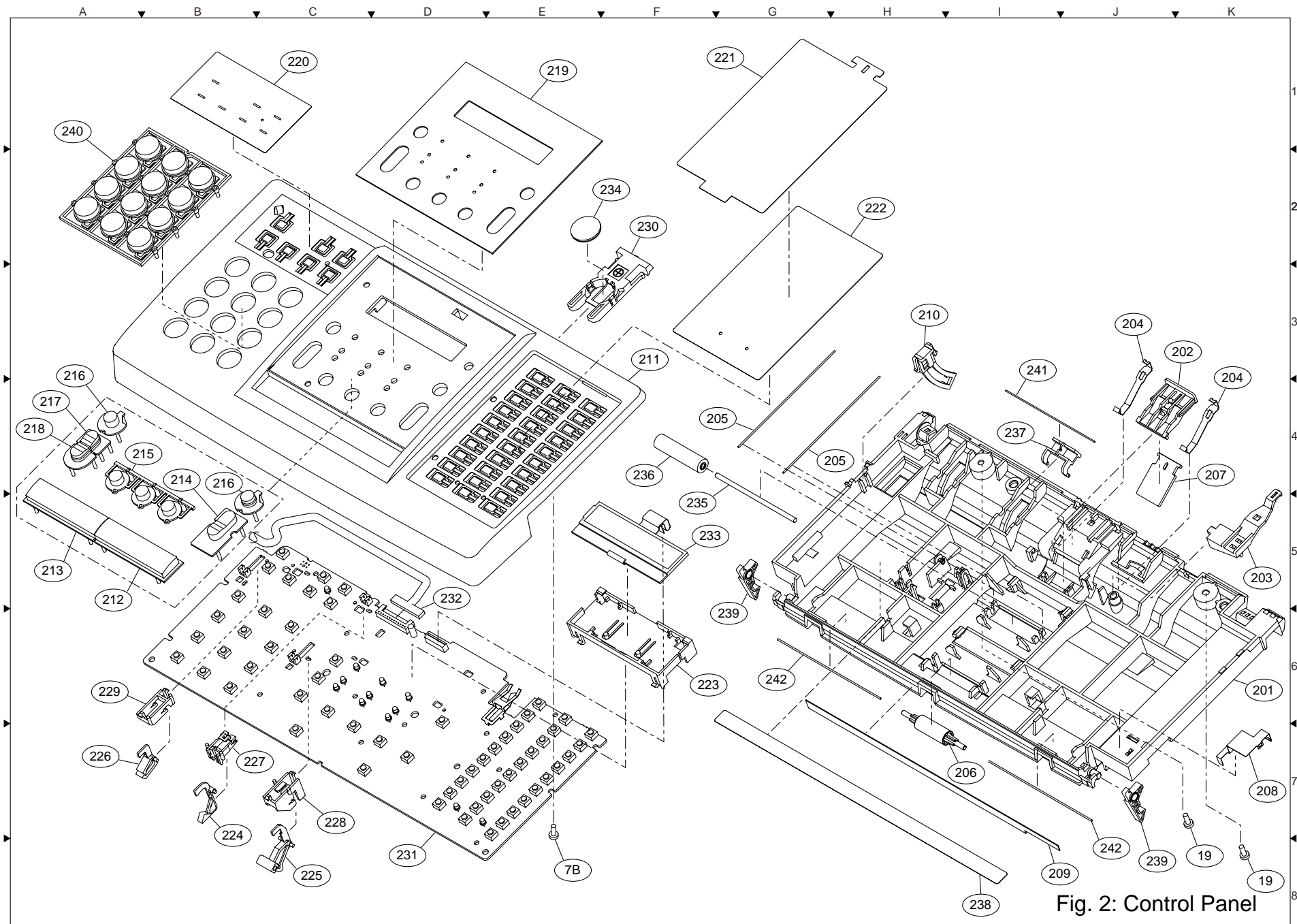


Fig. 2: Control Panel

7.3 Transmitter Assembly

AU=U.S.A. AC=Canada

Ref No.	Safety Mark	Part No.	Part Name	AU		AC		Location
				UF-585	UF-595	UF-585	UF-595	
301	-	DZJB000105	Guide, Transmit	1	1	1	1	2E
302	-	DZLA000163	Roller, Feed	1	1	1	1	5H
303	-	DZLA000164	Roller, Eject	1	1	1	1	4E
304	-	DZKG000094	Shaft, Clutch	1	1	1	1	1J
305	-	DZLF000270	Gear, ADF	1	1	1	1	5K
306	-	DZJA000584	Bracket, LED	1	1	1	1	7G
307	-	DZJA000585	Clip, LED	1	1	1	1	5E, 6F, 7H
308	-	DZTE000021	Glass, Scanning	1	1	1	1	1F
309	-	DZJA000586	Bracket, Motor	1	1	1	1	3I
310	-	DZLF000271	Gear, B54B22	1	1	1	1	4I
311	-	DZLF000272	Gear, B55D30	1	1	1	1	5H
312	-	DZLF000273	Gear, B55D16	1	1	1	1	5J
313	-	DZLF000274	Gear, D17	1	1	1	1	5I
314	-	DZLF000275	Gear, D50	1	1	1	1	5H
315	-	DZLM000082	Bushing, P10	1	1	1	1	2K
316	-	DZLM000083	Bushing, P6A	1	1	1	1	4E, 5F, 6G, 6I
317	-	DZKP000163	Plate, Ground	1	1	1	1	6I
318	-	DZLM000084	Bushing, P6B	1	1	1	1	1H
319	-	DZLD000009	Clutch, Drum	1	1	1	1	2I
320	-	DZKP000178	Spring Plate, EMI	1	1	1	1	3K
321	-	DZHP002384	Scanner Block	1	1	1	1	3B
322	-	DZJB000108	Chassis, Scanner	1	1	1	1	5A
324	-	42S1S15DCNB	Motor, Transmit	1	1	1	1	2I
325	-	DZHT000027	Stamp Head (Blue)	1	1	1	1	3D
326	-	DZJC000072	Stamp Holder	1	1	1	1	4D
327	-	DZHP002353	Stamp Solenoid	1	1	1	1	4D
328	-	DZFP000719	Harness, SCA/SCB-LED	1	1	1	1	7H
329	-	LNLR304713	LED Array, (A4)	1	1	1	1	6G
330	-	DZKP000001	Spring Plate, Mirror	1	1	1	1	3B, 4A, 4B, 4C, 7A, 8C
331	-	DZLA000096	Roller, ADF	1	1	1	1	1H
332	-	DZLF000165	Gear, D25F Drive	1	1	1	1	6H, 6I
333	-	DZKQ000004	Spring 1, Clutch	1	1	1	1	1J
334	-	DZTC000020	Mirror 1	1	1	1	1	7B
335	-	DZTC000021	Mirror 2	1	1	1	1	4A
336	-	DZTC000022	Mirror 3	1	1	1	1	4B
337	-	DZEC100264	PC Board, CCD	1	1	1	1	5D
338	-	DZJC000192	Shaft, ADF Angular	1	1	1	1	4J
339	-	DZFP000720	Harness, SCA/SCB-CCD	1	1	1	1	5C
340	-	DZFP000722	Harness, SCA/SCB-TX Motor	1	1	1	1	2I
341	-	DZJM000301	Film, ADF	1	1	1	1	1G
342	-	DZLM000092	Bushing, P6C	1	1	1	1	6G, 6I
343	-	DZKR000017	Wire Spring, Roller	1	1	1	1	6H
344	-	DZMH000009	Bracket, Eject Roller	1	1	1	1	8E
19	-	XTB3+8J	Screw	1	1	1	1	4D, 4K, 5D, 7F, 8H, 8I
4N	-	XSN3+W8FC	Screw	1	1	1	1	5E

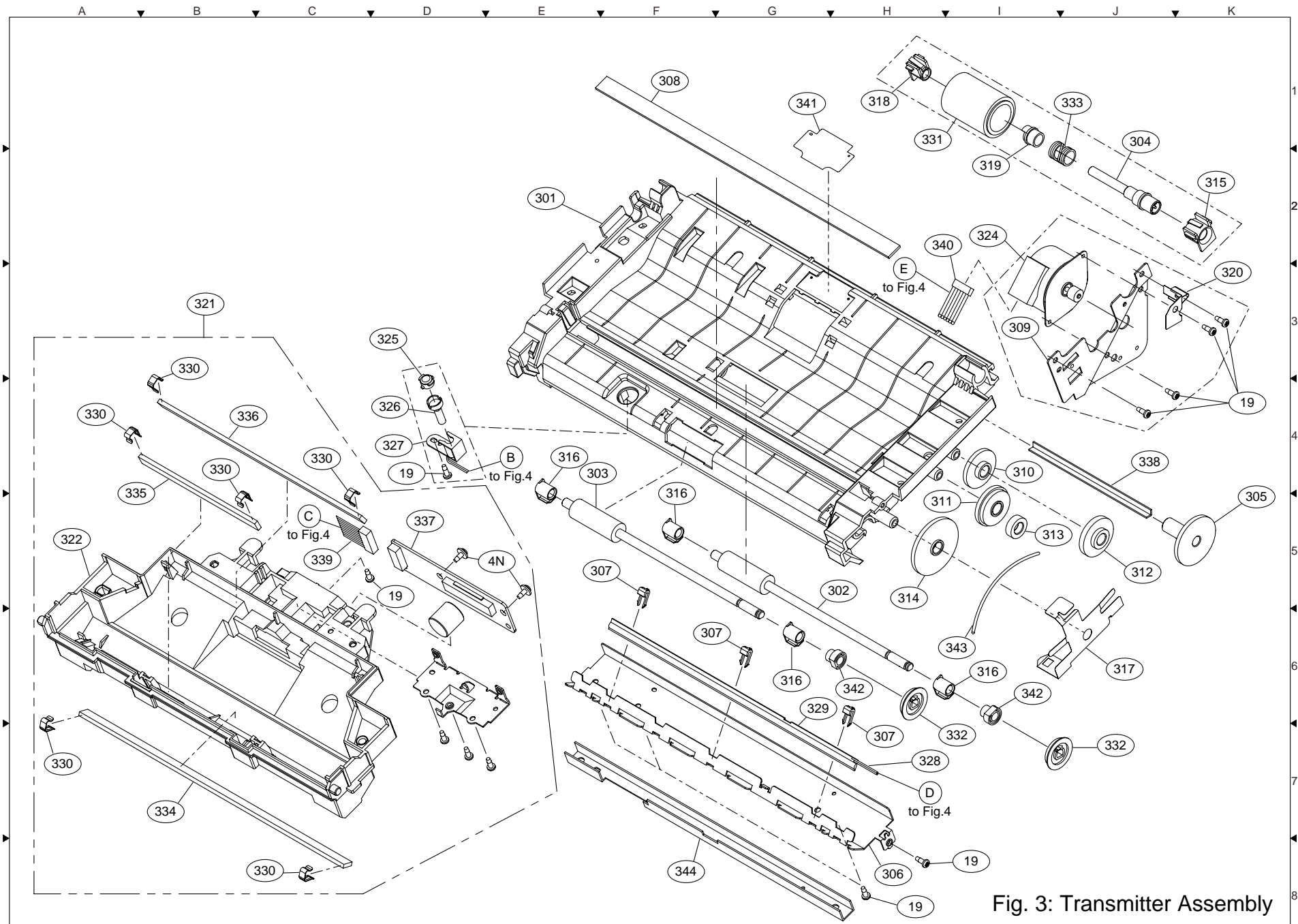


Fig. 3: Transmitter Assembly

7.4 Electrical Parts

AU=U.S.A. AC=Canada

Ref No.	Safety Mark	Part No.	Part Name	AU		AC		Location
				UF-585	UF-595	UF-585	UF-595	
401	-	DZEC101039	PC Board, LPC	1	1	1	1	4B
402	△	DZEC101038	PC Board, LCU	1	1	1	1	3G
403	-	DZMC000515	Bracket, AC Inlet	1	1	1	1	4J
404	-	DZMC000517	Cover, LVPS Protection	1	1	1	1	2I
405	-	DZMC000518	Bracket, Left Printer I/F	1	1	1	1	2J
406	-	DZMC000519	Bracket, Right Printer I/F	1	1	1	1	3K
407	-	DZJC000228	Holder, Printer Cover Sensor	1	1	1	1	1C
408	-	DZHA000115	Sheet, HVPS	1	1	1	1	7I
409	-	DZFP000718	Harness, SCA/SCB-LVPS	1	1	1	1	3H
411	-	DZFP000740	Flat Cable, SCA/SCB-LCU	1	1	1	1	2H
415	-	DZFP000725	Harness, LPC-HVPS	1	1	1	1	7F
417	-	DZFP000729	Harness, LPC-ILS	1	1	1	1	2B
421	-	DZFP000738	Flat Cable, SCA/SCB-PRTA	1	1	1	1	5B
422	△	DZEC101235	PC Board, SCB (UF-585AU)	1	-	-	-	3D
	△	DZEC101240	PC Board, SCA (UF-595AU)	-	1	-	-	3D
	△	DZEC101237	PC Board, SCB (UF-585AC)	-	-	1	-	3D
	△	DZEC101241	PC Board, SCA (UF-595AC)	-	-	-	1	3D
423	△	ETXDN200A4D	PSU, Low Voltage (100V)	1	1	1	1	4H
424	-	EUKMBN731HA	PSU, High Voltage	1	1	1	1	7G
425	-	DZEC100262	PC Board, ILS	1	1	1	1	1B
426	-	DZJF000350	Guide 2, Memory Card	1	1	1	1	3D
427	-	DZJK000005	Clamp, Harness	1	1	1	1	3F, 4D, 5C,
428	-	DZEC101464	PC Board, Printer I/F	1	1	1	1	1K
19	-	XTB3+8J	Screw	1	1	1	1	1F, 2J, 2K, 3A, 3B, 3H, 4J, 6H,
B5	-	XSB4+10BN	Screw	1	1	1	1	3I
4N	-	XSN3+W8FC	Screw	1	1	1	1	3J
B1	-	DZPB000007	Screw	1	1	1	1	1K, 2K

IMPORTANT SAFETY NOTICE:

Components identified by the sign △ have special characteristics important for safety. When replacing any of these components, use only the specified parts.

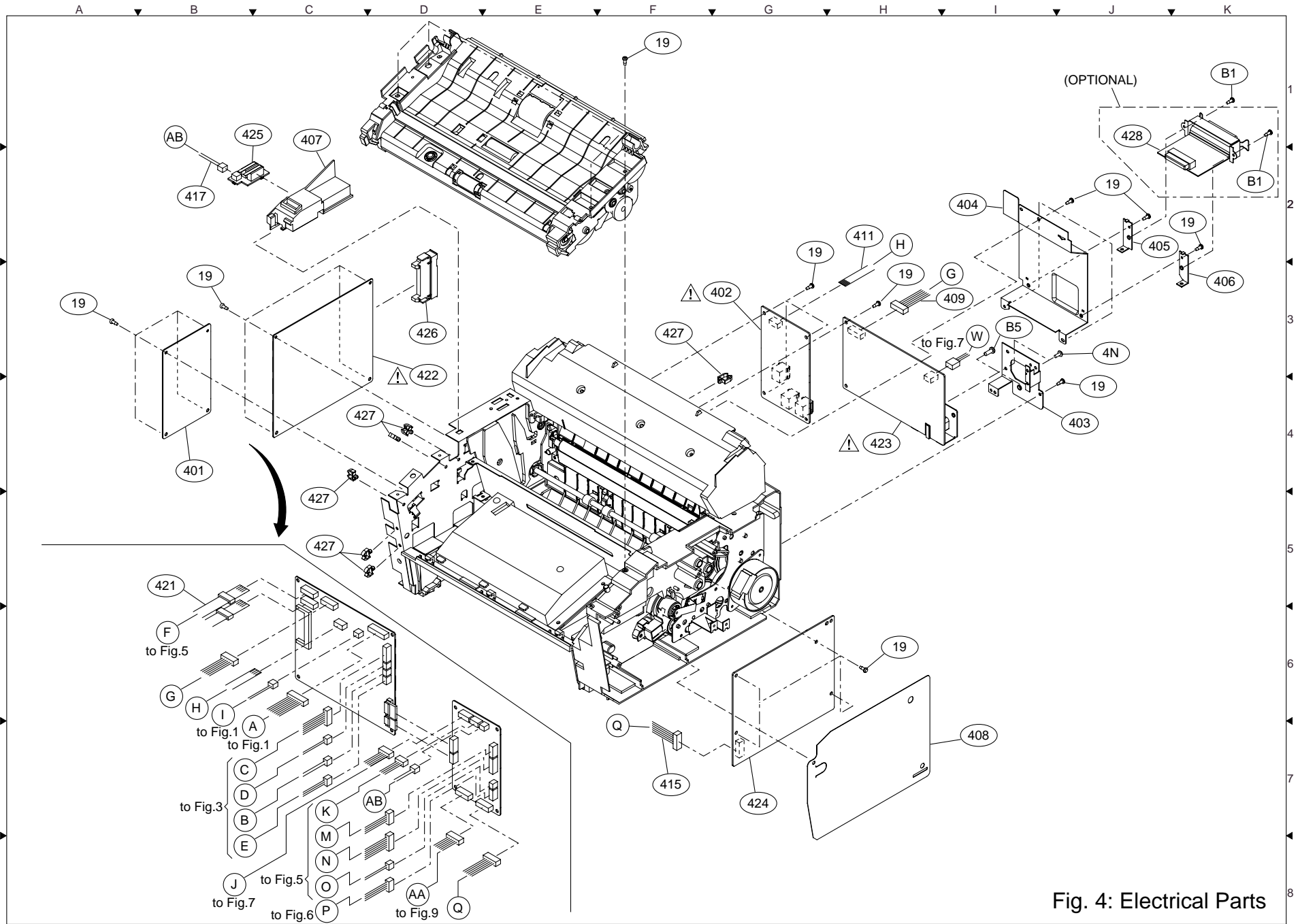
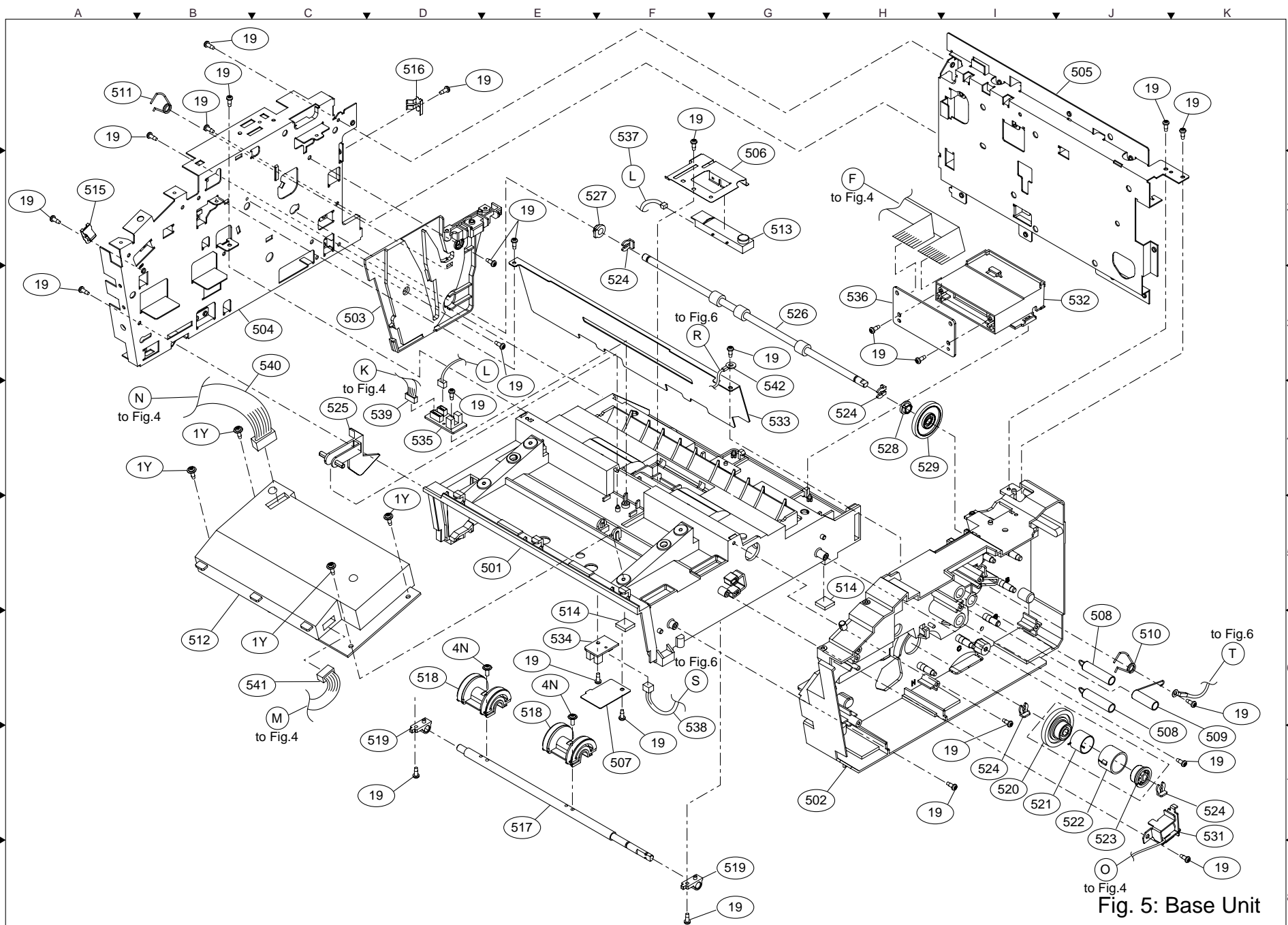


Fig. 4: Electrical Parts

7.5 Base Unit

AU=U.S.A. AC=Canada

Ref No.	Safety Mark	Part No.	Part Name	AU		AC		Location
				UF-585	UF-595	UF-585	UF-595	
501	-	DZJA000587	Chassis, Bottom	1	1	1	1	5E
502	-	DZJA000588	Chassis, Right	1	1	1	1	7G
503	-	DZJF000356	Chassis, Left Sub	1	1	1	1	3C
504	-	DZMC000535	Chassis, Left	1	1	1	1	3C
505	-	DZMC000536	Chassis, Rear	1	1	1	1	1J
506	-	DZKP000162	Spring Plate, Toner Sensor	1	1	1	1	2G
507	-	DZJE000547	Plate, A	1	1	1	1	7F
508	-	DZKN000161	Spring, A Coil	1	1	1	1	6J, 7J
509	-	DZKN000162	Spring, B Coil	1	1	1	1	7K
510	-	DZKQ000021	Spring, Right Cartridge Locking	1	1	1	1	6J
511	-	DZKQ000022	Spring, Left Cartridge Locking	1	1	1	1	1A
512	-	LPA1602F02	Laser Unit	1	1	1	1	6B
513	-	DZAN000002	Sensor, Toner	1	1	1	1	2G
514	-	DZMM000016	Leg, Rubber	1	1	1	1	5G, 6E
515	-	DZKP000009	Plate, Ground	1	1	1	1	2A
516	-	DZJL000023	Ground Plate, Memory Card	1	1	1	1	1D
517	-	DZKG000095	Shaft, Feed Roller	1	1	1	1	7E
518	-	DZLA000081	Roller, Paper Feed	1	1	1	1	6D, 6E
519	-	DZLM000050	Bushing, P6L8	1	1	1	1	7D, 7G
520	-	DZLF000131	Gear, E34	1	1	1	1	7I
521	-	DZKN000073	Spring, Clutch Coil	1	1	1	1	7I
522	-	DZJB000024	Case, Clutch	1	1	1	1	7J
523	-	DZJM000300	Drum, Clutch	1	1	1	1	7J
524	-	DZJM000171	E-Ring	1	1	1	1	3F, 4H, 7I, 7K
525	-	DZHC000089	Actuator, No Paper	1	1	1	1	4C
526	-	DZLA000175	Roller, Feed	1	1	1	1	3G
527	-	DZLM000052	Bushing, P6L5 Conductive (Black)	1	1	1	1	2F
528	-	DZLM000006	Bushing, P6L5 (White)	1	1	1	1	4H
529	-	DZLF000268	Gear, Feed Roller	1	1	1	1	4H
531	-	DZGB000019	Solenoid, Paper Feed	1	1	1	1	7K
532	-	DZJC000235	Guide, Printer I/F PCB	1	1	1	1	3J
533	-	DZMC000520	Plate, CCD Shield	1	1	1	1	4G
534	-	DZEC101076	PC Board, SNS2	1	1	1	1	6E
535	-	DZEC101163	PC Board, SNS3	1	1	1	1	4D
536	-	DZEC101210	PC Board, PRTA	1	1	1	1	3H
537	-	DZFP000730	Harness, SNS3-TNR	1	1	1	1	2F
538	-	DZFP000732	Harness, SNS1-SNS2	1	1	1	1	6F
539	-	DZFP000731	Harness, LPC-SNS3	1	1	1	1	4D
540	-	DZFP000733	Harness, LPC-LSU1	1	1	1	1	4B
541	-	DZFP000734	Harness, LPC-LSU2	1	1	1	1	6C
542	-	DZFP000764	Ground Wire (CCD)	1	1	1	1	4G
1Y	-	XTB3+10J	Screw	1	1	1	1	4B, 5D, 6C
4N	-	XSN3+W8FC	Screw	1	1	1	1	6D, 6E
19	-	XTB3+8J	Screw	1	1	1	1	1A, 1B, 1D, 1F, 1J, 1K, 2A, 2E, 3A, 3G, 3H, 4D, 4E, 6E, 6K, 7D, 7F, 7I, 7K, 8G, 8K



7.6 Paper Transportation

AU=U.S.A. AC=Canada

Ref No.	Safety Mark	Part No.	Part Name	AU		AC		Location
				UF-585	UF-595	UF-585	UF-595	
601	-	DZJF000353	Guide, Transfer	1	1	1	1	4J
602	-	DZJF000355	Guide, BTR	1	1	1	1	4H
603	-	DZHA000114	Sheet, Mylar	1	1	1	1	4H
604	-	DZLA000174	Roller, Bias Transfer	1	1	1	1	3G
605	-	DZLM000085	Bushing, Left BTR (White)	1	1	1	1	2F
606	-	DZKN000025	Spring, BTR	1	1	1	1	2G, 4I
607	-	DZLA000080	Roller, Pinch	1	1	1	1	3H
608	-	DZKR000014	Spring, Wire	1	1	1	1	3H, 4I
609	-	DZHC000088	Actuator, Timing	1	1	1	1	3H
610	-	DZLM000081	Bushing, Right BTR (Black)	1	1	1	1	4I
611	-	DZLF000269	Gear, BTR	1	1	1	1	4I
612	-	DZJL000092	Plate, Discharge	1	1	1	1	2J
613	-	DZFP000747	Resistor, 200MΩ, 1/2 Watt	1	1	1	1	1H
614	-	DZKP000160	Plate Spring, Ground Transfer	1	1	1	1	1I
615	-	DZEP000376	PC Board, SNS1	1	1	1	1	2J
616	-	DZJA000590	Bracket, Printer Motor	1	1	1	1	6H
617	-	DZLF000281	Gear D, E24	1	1	1	1	5F
618	-	DZLF000279	Gear A, D31	1	1	1	1	5F
619	-	DZLF000278	Gear F, D55	1	1	1	1	5F
620	-	DZLF000280	Gear E, D25E29	1	1	1	1	5F
621	-	DZLF000277	Gear B, D60D20	1	1	1	1	6F
622	-	DZLF000276	Gear G, B83D22	1	1	1	1	6F
623	-	DZLF000282	Gear C, D62E18	1	1	1	1	6E
624	-	DZLF000283	Gear I, E29	1	1	1	1	7F
625	-	DZLF000284	Gear H, E23	1	1	1	1	7E
626	-	55SPM25D7NA2	Motor, Printer	1	1	1	1	7H
627	-	DZJD000023	Bracket, HVPS Support	1	1	1	1	8G
628	-	DZKP000161	Ground Spring, Feed Roller	1	1	1	1	7I
629	-	DZFP000737	Harness, FG1 (Fuser)	1	1	1	1	1H
630	-	DZFP000736	Harness, HV	1	1	1	1	3J
631	-	DZFP000728	Harness, SNS1-SNS4	1	1	1	1	1K
632	-	DZFP000724	Harness, LPC-RXMOT	1	1	1	1	8H
19	-	XTB3+8J	Screw	1	1	1	1	1I, 1J, 3F, 4F, 6H, 7H, 8F, 8G, 8I
C8	-	XTW3+8SFC	Screw	1	1	1	1	1H, 3J
4N	-	XSN3+W8FC	Screw	1	1	1	1	5G, 8F

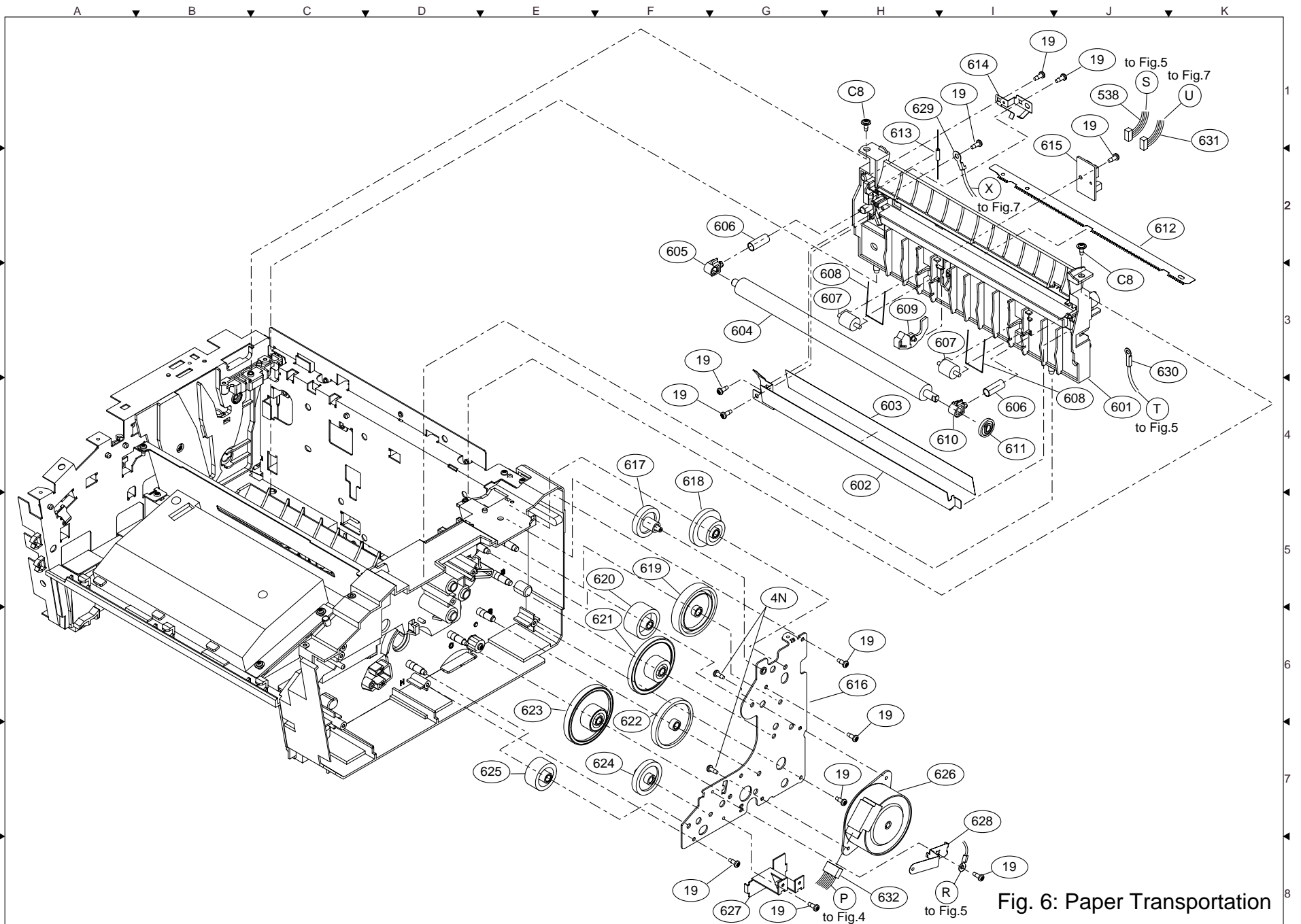


Fig. 6: Paper Transportation

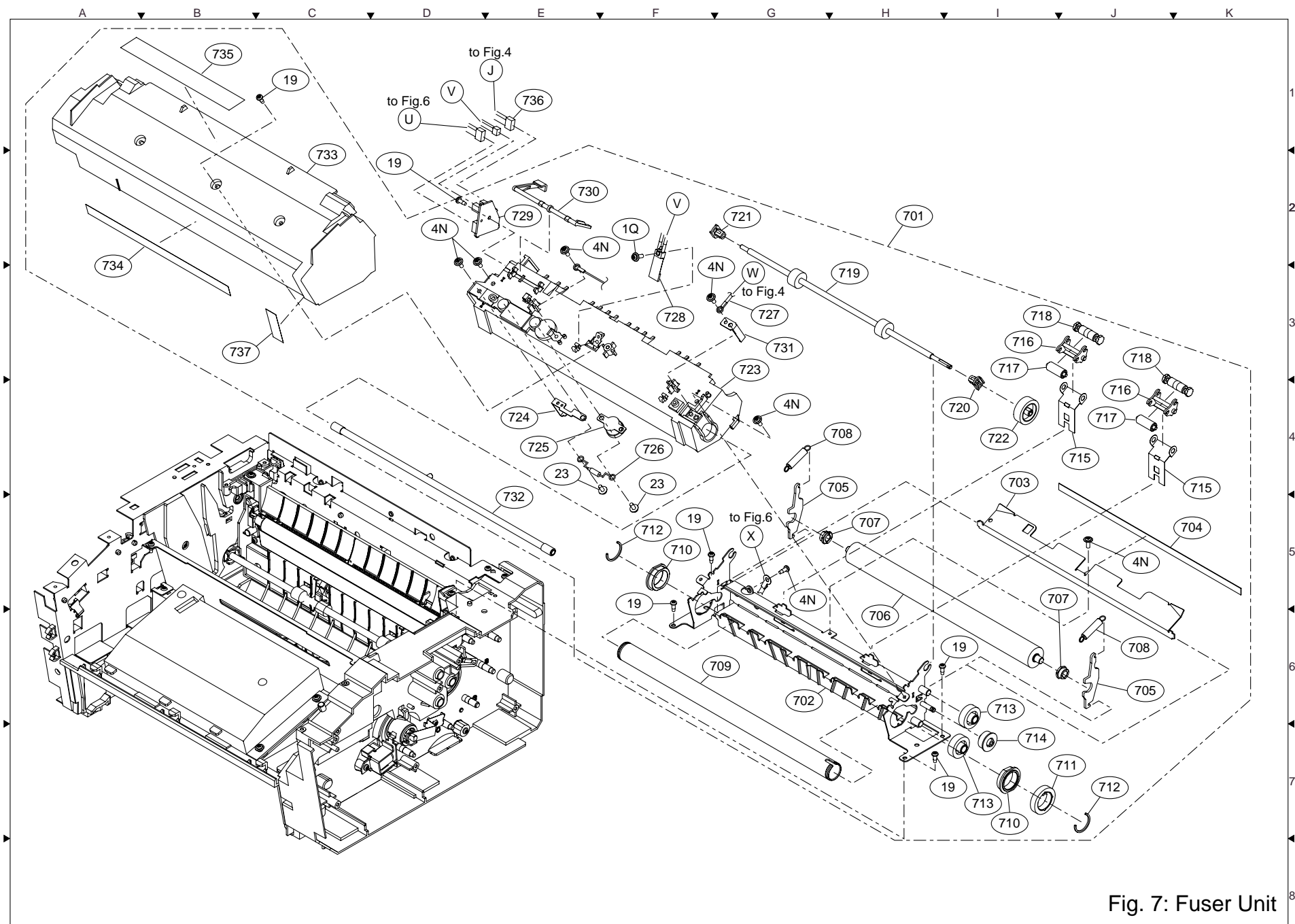
7.7 Fuser Unit

AU=U.S.A. AC=Canada

Ref No.	Safety Mark	Part No.	Part Name	AU		AC		Location
				UF-585	UF-595	UF-585	UF-595	
701	-	DZHP002455	Fuser Unit	1	1	1	1	2H
702	-	DZJB000112	Frame, Fuser	1	1	1	1	6G
703	-	DZJF000354	Guide, Lower Paper Exit	1	1	1	1	4I
704	-	DZGT000021	Brush, Discharge	1	1	1	1	5K
705	-	DZKK000039	Plate, Pressure Roller Arm	1	1	1	1	4H, 6J
706	-	DZLA000088	Roller, Pressure	1	1	1	1	6H
707	-	DZLM000041	Bushing, P6L5.5	1	1	1	1	5H, 5J
708	-	DZKN000160	Spring, Pressure	1	1	1	1	4H, 6J
709	-	DZLA000072	Roller, Fuser	1	1	1	1	6F
710	-	DZLM000047	Bushing, P17L6.8	1	1	1	1	5F, 7I
711	-	DZLF000147	Gear, E24 Drive	1	1	1	1	7J
712	-	DZPJ000002	C-Ring	1	1	1	1	5F, 7J
713	-	DZLF000263	Gear, E18	1	1	1	1	6I, 7I
714	-	DZLF000264	Gear, E14	1	1	1	1	7I
715	-	DZKP000159	Spring, Pinch Roller	1	1	1	1	4J, 4K
716	-	DZJA000583	Holder, Pinch Roller	1	1	1	1	3I, 4J
717	-	DZLA000172	Pinch Roller 1, Exit	1	1	1	1	3I, 4J
718	-	DZLA000188	Pinch Roller 2, Exit	1	1	1	1	3I, 3J
719	-	DZLA000173	Roller, Exit	1	1	1	1	3H
720	-	DZLM000039	Bushing, Right P3.5L11.2	1	1	1	1	4I
721	-	DZLM000040	Bushing, Left P3.5L11.2	1	1	1	1	2G
722	-	DZLF000265	Gear, E22	1	1	1	1	4I
723	-	DZJB000111	Cover, Fuser	1	1	1	1	3G
724	-	DZJC000222	Terminal A, Fuser Lamp	1	1	1	1	4E
725	-	(See Note)	Thermostat	1	1	1	1	4E
726	-	(See Note)	Thermal Fuse	1	1	1	1	4F
727	-	DZFP000735	Harness, LVPS-Fuser	1	1	1	1	3G
728	-	DZGT000022	Thermistor Assembly	1	1	1	1	3F
729	-	DZEC101263	PC Board, SNS4	1	1	1	1	2E
730	-	DZKK000038	Actuator, Paper Exit	1	1	1	1	2E
731	-	DZJC000223	Terminal B, Fuser Lamp	1	1	1	1	3G
732	-	DZGN000006	Lamp, Fuser (100V)	1	1	1	1	4E
733	-	DZJE000544	Cover, Fuser Top	1	1	1	1	2C
734	-	DZNK000036	Caution Label, High Temperature	1	1	1	1	2A
735	-	DZNK002185	Instruction Label, Print Cartridge	1	1	1	1	1B
736	-	DZFP000727	Harness, LPC-SNS4	1	1	1	1	1E
737		DZJM000327	Sheet, Mylar	1	1	1	1	3B
19	-	XTB3+8J	Screw	1	1	1	1	1C, 2D, 5F, 6I, 7H
1Q	-	XYN3+F10	Screw	1	1	1	1	2F
23	-	XYN3+F8	Screw	1	1	1	1	4E, 4F
4N	-	XSN3+W8FC	Screw	1	1	1	1	2D, 2E, 3F, 4G, 5G, 5J

Note:

The Thermostat and Thermal Fuse is not available as individual replacement part. It is recommended to replace the entire Fuser Unit (Ref. No. 701) when either part is defective.



7.8 Cassette

AU=U.S.A. AC=Canada

Ref No.	Safety Mark	Part No.	Part Name	AU		AC		Location
				UF-585	UF-595	UF-585	UF-595	
801	-	DZJF000359	Base Frame, Cassette	1	1	1	1	7I
802	-	DZJF000360	Guide, Paper Length	1	1	1	1	8D
803	-	DZJF000364	Guide, Paper Width	1	1	1	1	3F
804	-	DZJF000362	Cover, Cassette	1	1	1	1	6B
805	-	DZJF000365	Tray, Document Return	1	1	1	1	3B
806	-	DZKM000018	Plate, Pressure	1	1	1	1	3J
807	-	DZJP000005	Pad, Pressure Plate	1	1	1	1	1H, 1I
808	-	DZKN002122	Label, Cassette	1	1	1	1	1E
809	-	DZJC000226	Paper Separation Clip, Left	1	1	1	1	3H
810	-	DZKN000163	Spring, Pressure	1	1	1	1	3I, 4J
811	-	DZJC000227	Paper Separation Clip, Right	1	1	1	1	5J

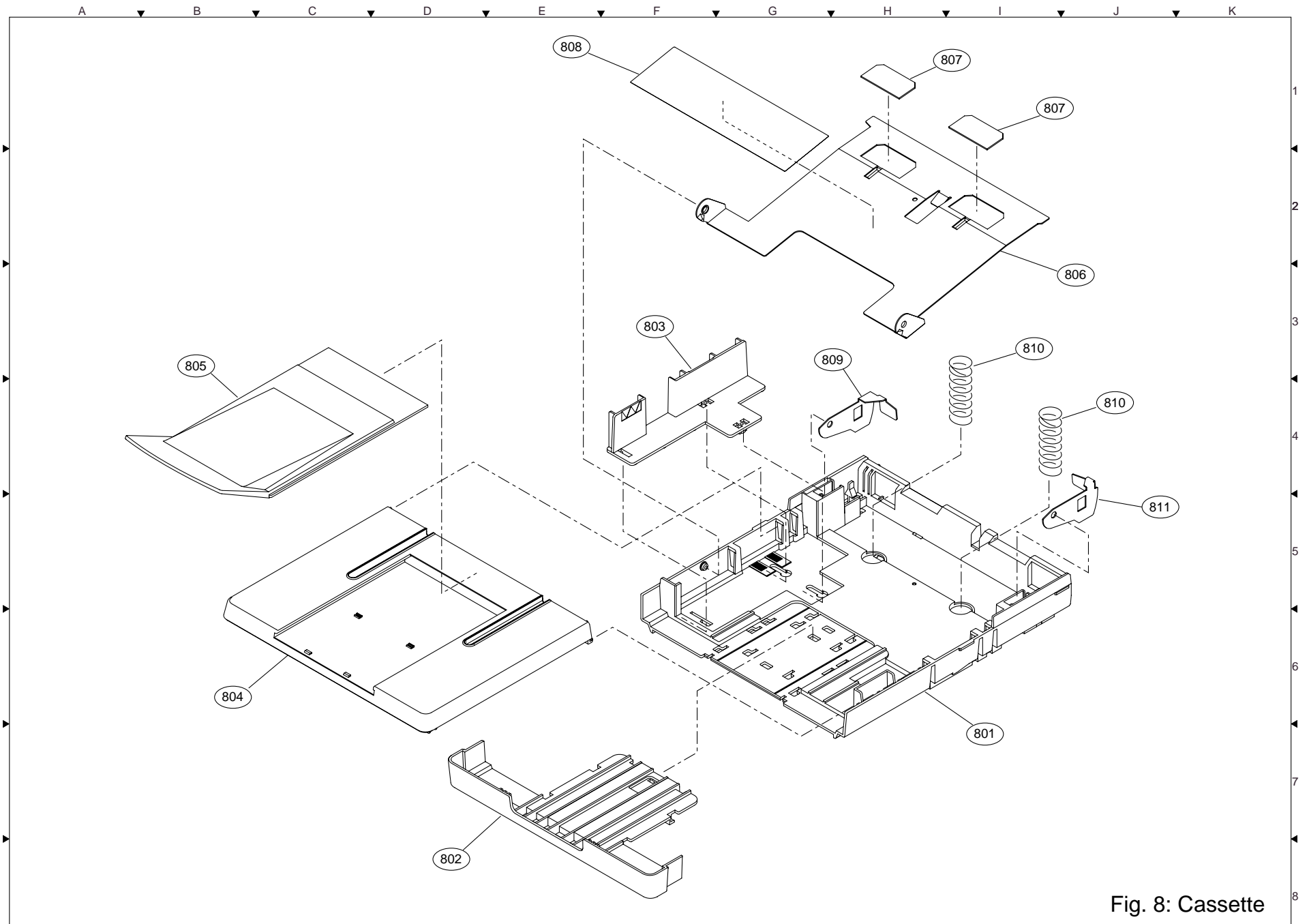


Fig. 8: Cassette

7.9 Option Cassette

AU=U.S.A. AC=Canada

Ref No.	Safety Mark	Part No.	Part Name	AU		AC		Location
				UF-585	UF-595	UF-585	UF-595	
901	-	DZJB000119	Frame, Option Cassette Base	-	1	-	1	5D
902	-	DZMC000514	Plate, Base Frame	-	1	-	1	1D
903	-	DZJA000593	Bracket, Gear	-	1	-	1	5K
904	-	DZLA000187	Roller 2, Feed	-	1	-	1	2I
905	-	DZLF000282	Gear, D62E18	-	1	-	1	5I
906	-	DZLF000283	Gear, E29	-	1	-	1	6I
907	-	DZLF000284	Gear, E23	-	1	-	1	5J
908	-	DZGB000019	Solenoid, Paper Feed	-	1	-	1	7K
909	-	DZKP000161	Ground Spring, Feed Roller	-	1	-	1	6K
910	-	DZKG000095	Shaft, Feed Roller	-	1	-	1	3I
911	-	DZLA000081	Roller, Paper Feed	-	1	-	1	1G, 2H
912	-	DZLM000050	Bushing, P6L8	-	1	-	1	1H, 2F, 3H, 3J,
913	-	DZJM000171	E-Ring	-	1	-	1	3I, 4J
914	-	DZLF000131	Gear, E34	-	1	-	1	3I
915	-	DZKN000073	Spring, Clutch Coil	-	1	-	1	4I
916	-	DZJB000024	Case, Clutch	-	1	-	1	4J
917	-	DZJM000300	Drum, Clutch	-	1	-	1	4J
918	-	DZLF000268	Gear, Feed	-	1	-	1	3K
919	-	DZLA000080	Roller, Pinch	-	1	-	1	2I, 2J
920	-	DZKP000118	Spring, Pinch Roller	-	1	-	1	1I, 2J
921	-	DZEP000406	PC Board, CST2	-	1	-	1	3D
922	-	DZHC000089	Actuator, No Paper	-	1	-	1	3F
923	-	DZEC101076	PC Board, SNS2	-	1	-	1	7F
924	-	DZJE000547	Plate A	-	1	-	1	8F
925	-	DZMM000016	Leg, Rubber	-	1	-	1	6F, 7H
926	-	DZJF000371	Tray, Paper Cassette 2	-	1	-	1	6B
927	-	DZFP000717	Harness, CST2-CSTSNS2	-	1	-	1	7G
928	-	DZFP000716	Cover 2, Cassette	-	1	-	1	3D
930	-	DZJF000380	Sub Guide, Recording Paper	1	1	1	1	4C
5Y	-	XUC4	E-Ring	-	1	-	1	5I, 6I
4N	-	XSN3+W8FC	Screw	-	1	-	1	1G, 2H
19	-	XTB3+8J	Screw	-	1	-	1	1A, 1B, 1H, 1I, 2C, 2E, 2F, 2J, 3B, 3D, 3E, 5J, 6K, 7F, 7J, 8G

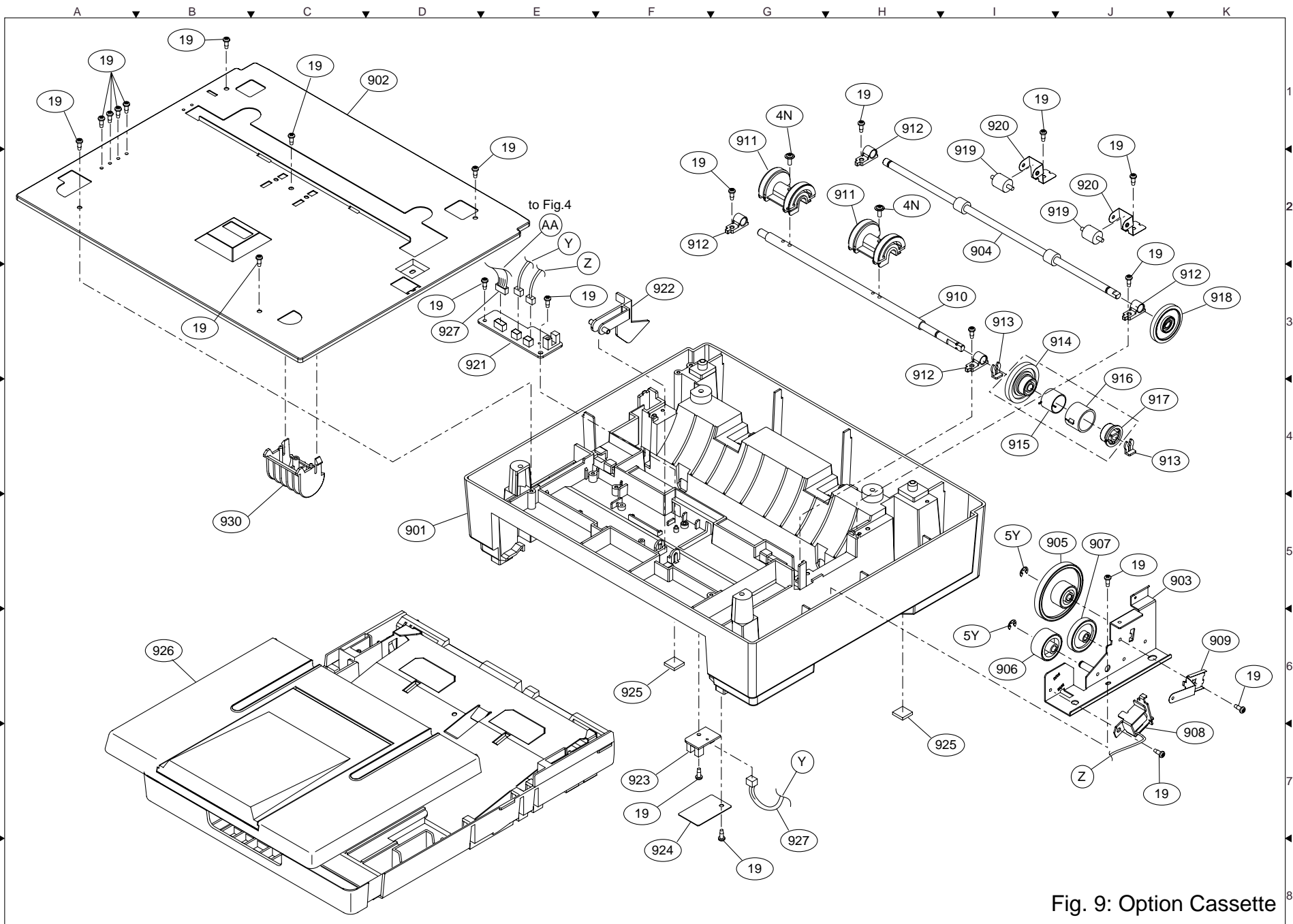


Fig. 9: Option Cassette

7.10 Packing and Accessories

AU=U.S.A. AC=Canada

Ref No.	Safety Mark	Part No.	Part Name	AU		AC		Location
				UF-585	UF-595	UF-585	UF-595	
1001	-	DZRB000398	Carton (UF-585)	1	-	1	-	6E
	-	DZRB000407	Carton (UF-595)	-	1	-	1	6E
1002	-	DZRH000288	Assembly, Cushion	1	1	1	1	2D, 2E, 5C, 6E
1003	-	DZRK000016	Cassette Sheet	1	1	1	1	4C
1005	-	DZRD000008	Box, Accessories	1	1	1	1	6A
1106	-	DZSD000868	User's Guide (English)	1	1	1	1	5A
	-	DZSD000869	Quick Guide (English)	1	1	1	1	5A
	-	DZSD000871	User's Guide (Canadian French)	-	-	1	1	5A
	-	DZSD000872	Quick Guide (Canadian French)	-	-	1	1	5A
1007	-	N/A	(See Ref. No. 111 and 112)	1	1	1	1	4A
1008	⚠	DZFM000027	Power Cord	1	1	1	1	3A
1009	-	DZFN000050	Telephone Line Cable	1	1	1	1	3A

IMPORTANT SAFETY NOTICE:

Components identified by the sign ⚠ have special characteristics important for safety. When replacing any of these components, use only the specified parts.

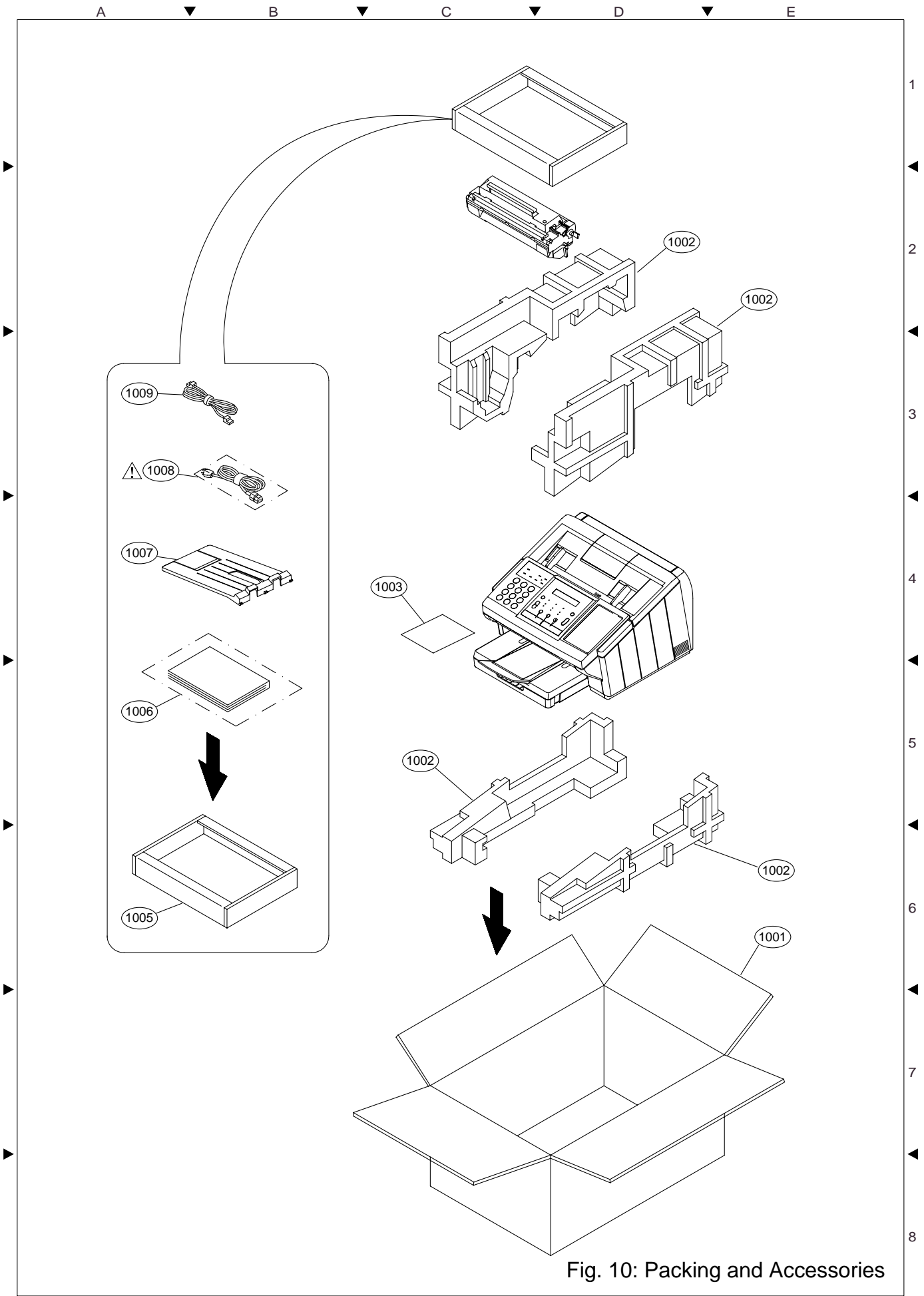
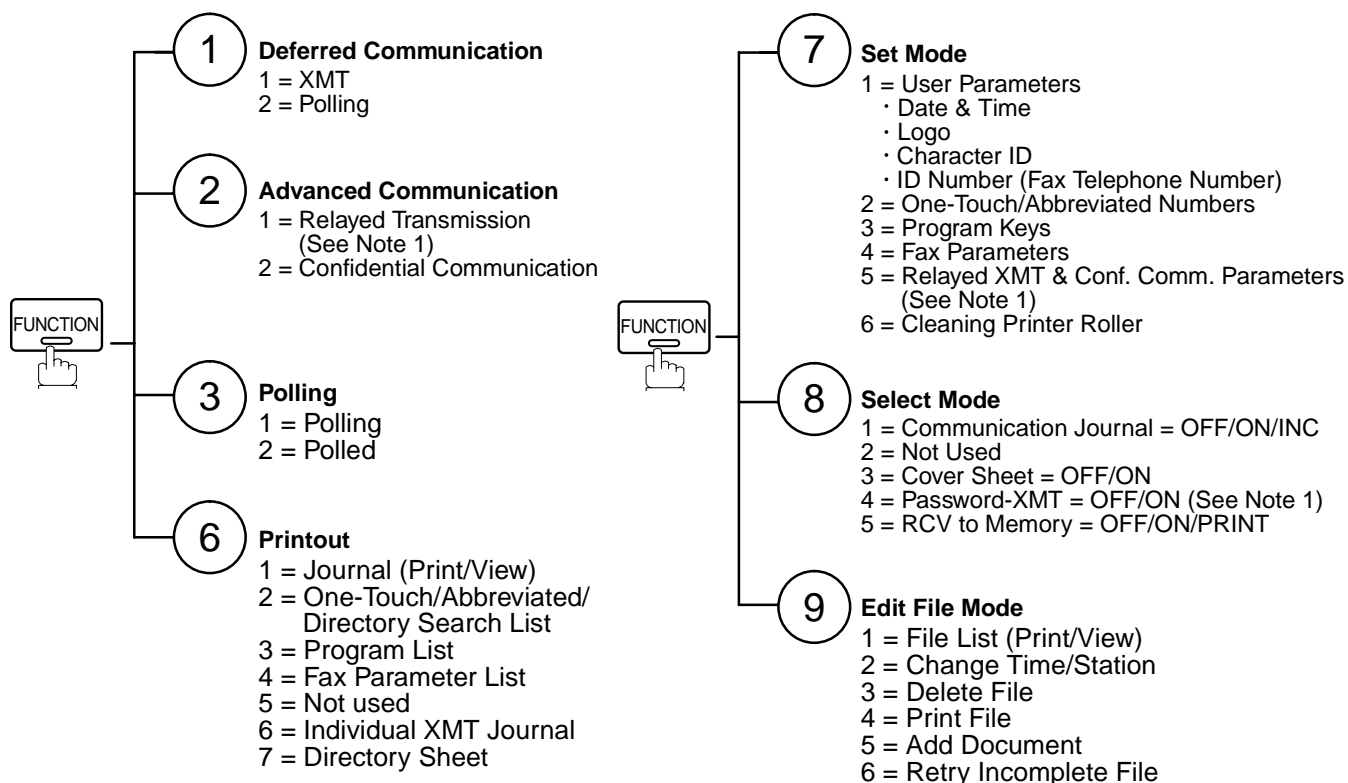


Fig. 10: Packing and Accessories

8 Installation

8.1 Function Key

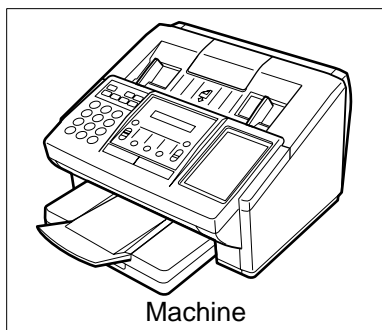
Any function can be started by first pressing **FUNCTION** and then enter the function number, or by pressing **▼** or **▲** scroll key repeatedly until the desired function appears on the display.



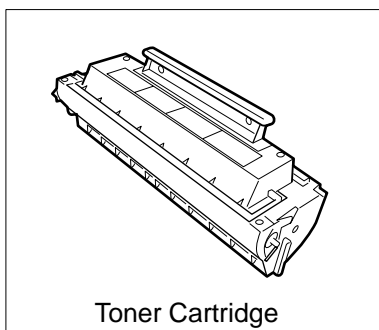
! **Note:** 1. If Fax Parameter is not preset to a Valid position, which enables you to use the function, the display will not show the function.

8.2 Main Unit and Accessories

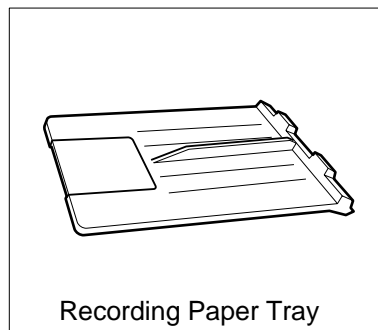
Unpack the carton and check that you have all the accessories illustrated.



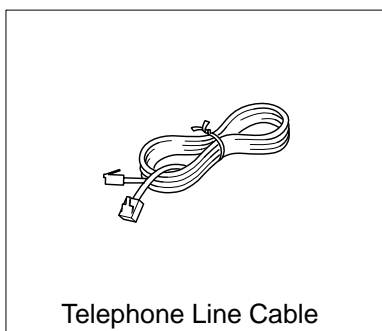
Machine



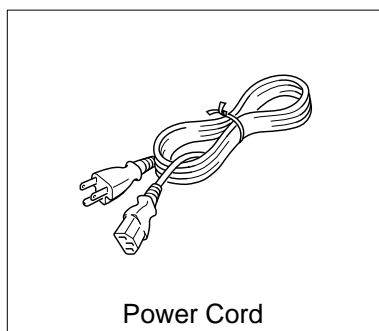
Toner Cartridge



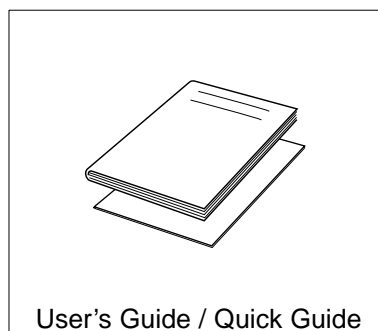
Recording Paper Tray



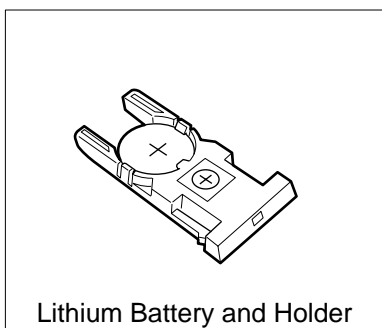
Telephone Line Cable



Power Cord

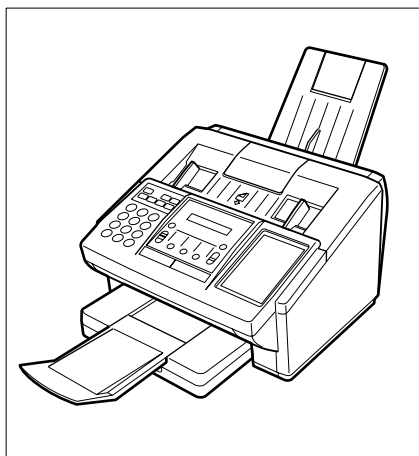


User's Guide / Quick Guide



Lithium Battery and Holder

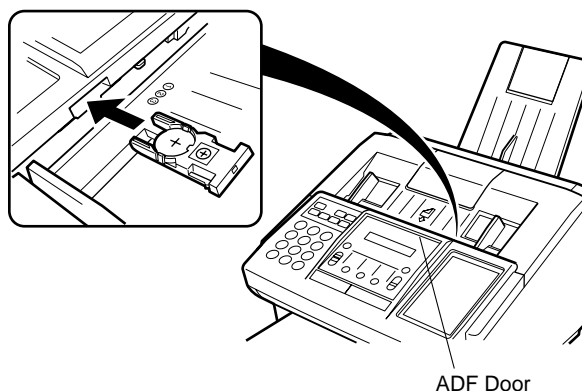
8.3 Installing the Accessories



Final Installed View

Installing the Lithium Battery (This battery is used to backup the clock during power failures, see page 149 of the User's Guide)

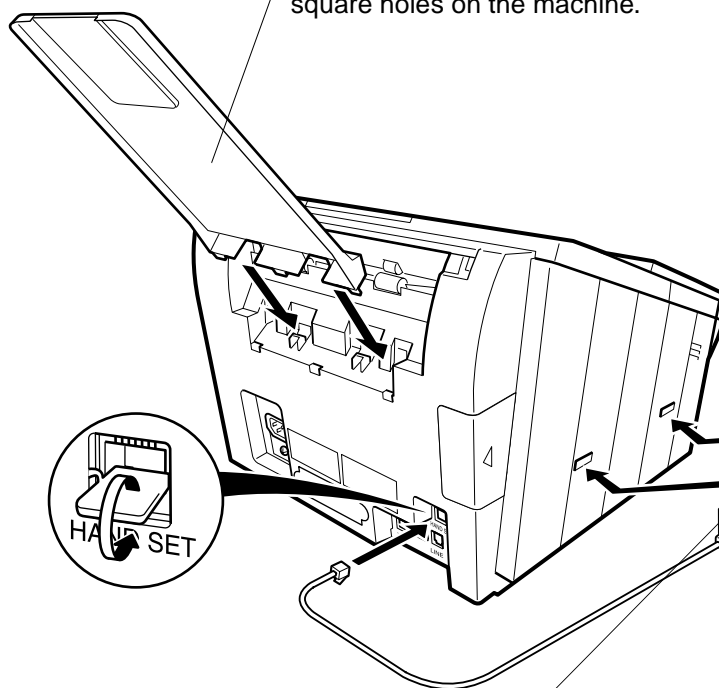
Install the Battery into the Holder and slide it into the slot on the ADF Door as shown.



ADF Door

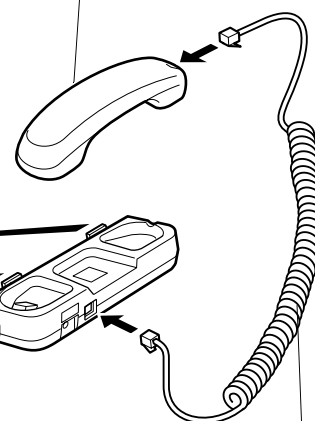
Recording Paper Tray

Hook the projections into the square holes on the machine.



Handset

[Available as an Option]



Handset Cradle [Available as an Option]

Hook the projections into the square holes on the machine.
Connect the cable into the HANDSET jack on the machine.

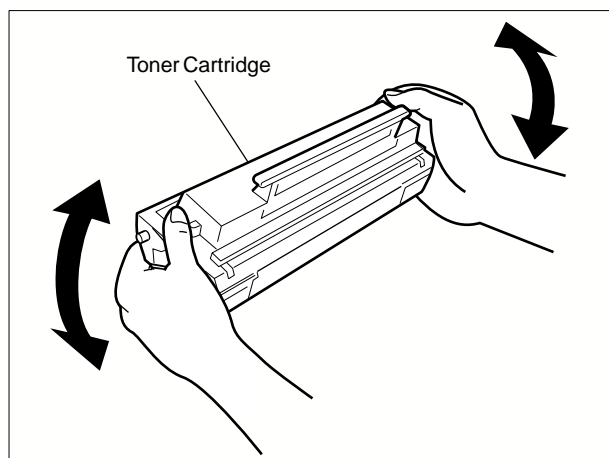
Handset Cord

[Available as an Option]



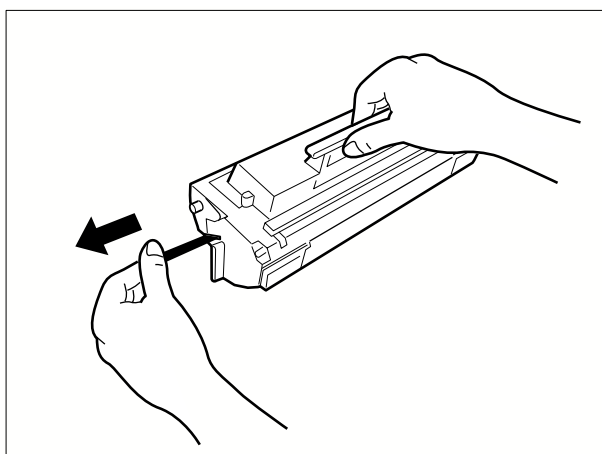
8.4 Installing the Toner Cartridge

1



Unpack the Toner Cartridge and rock it back and forth as shown for 5 or 6 times to even the toner inside.

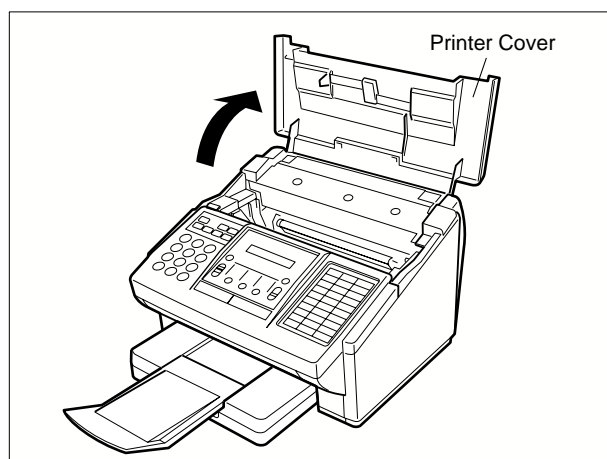
2



Remove the protective seal.

Note: Pull on the seal slowly and straight out.

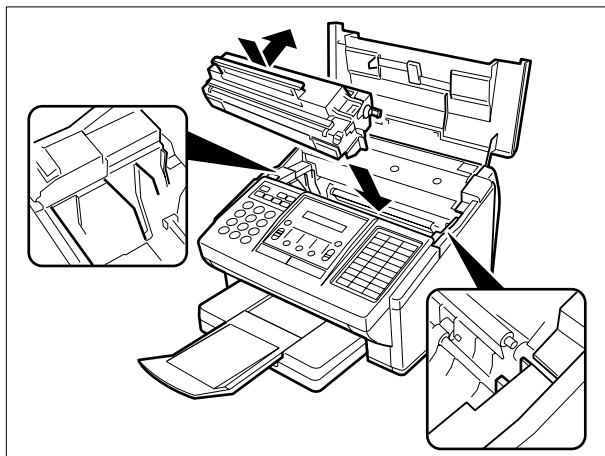
3



Open the Printer Cover.

Continued on the next page.

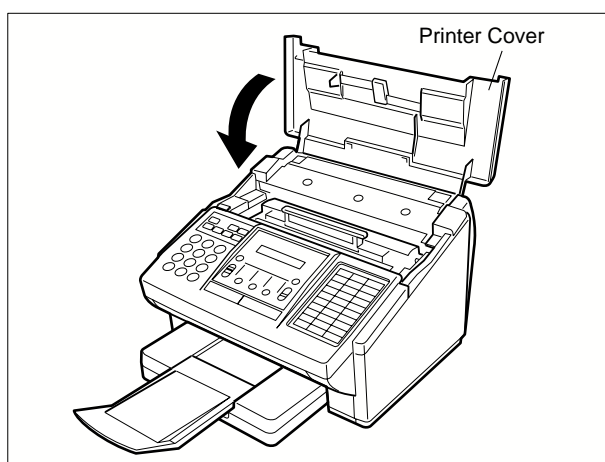
4



Align the projections on both sides of the Toner Cartridge with the grooves in the machine as shown and insert the Toner Cartridge into the machine.

Note : Lock the Toner Cartridge into place by pressing the handle down and then pushing towards the rear of the machine.

5



Close the Printer Cover.

6

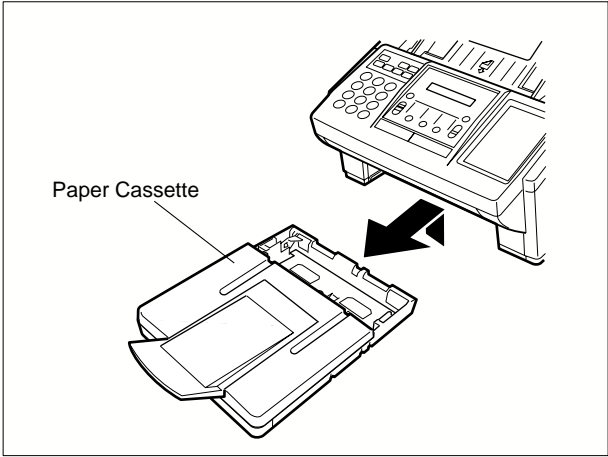
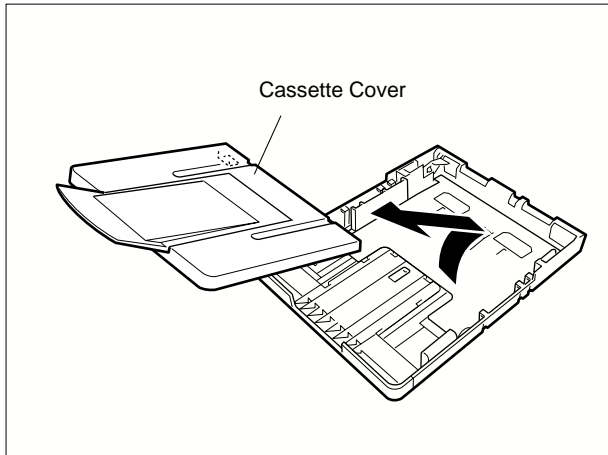
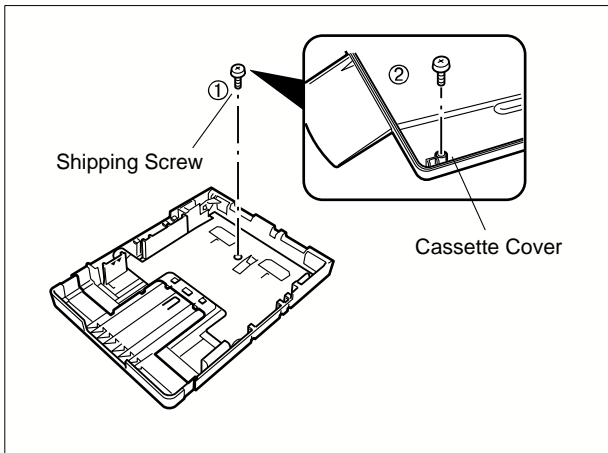
If you are replacing the Toner Cartridge, it is recommended to clean the Printer Roller to maintain good printing quality. To clean the Printer Roller, follow the procedure on page 146 of the User's Guide.

8.5 Loading the Recording Paper

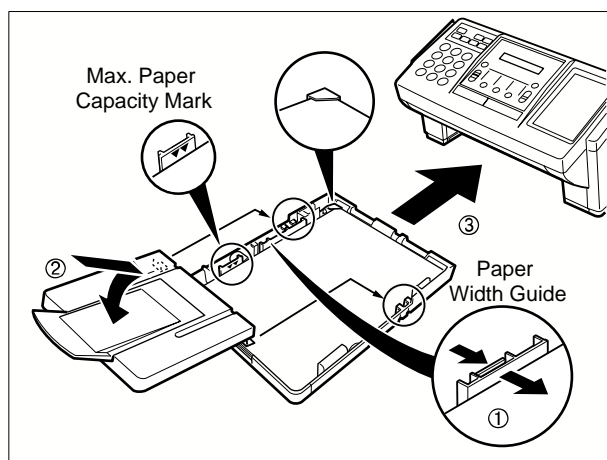
Paper Specifications

In general, most bond papers will produce excellent results. Most photocopy papers will also work very well. There are many "name" and "generic" brands of paper available. We recommend that you test various papers until you obtain the results you are looking for. For detailed recommended paper specifications, see page 154 of the User's Guide.

How to Load the Recording Paper

- 1**  Lift up the Paper Cassette slightly and slide it out from the machine.
- 2**  Remove the Paper Cassette Cover.
- 3**  (1) Remove the Shipping Screw securing the Pressure Plate.
(2) Store the screw by attaching it to the post provided under the Paper Cassette Cover for future use.

4



(1) Load the paper into the Paper Cassette.

Slide the paper width guide to the left until it lightly touches the stack of paper without bending the paper. The paper must fit squarely and firmly between the Paper Width Guide and the right side of tray. If it does not, the paper may feed into the printer incorrectly resulting in a paper jam.

Caution: Make sure that the paper is set under the metal Paper Separation Clips and that it does not exceed the Maximum Paper Capacity Mark. You can load about 250 sheets (20 lb weight). For paper specification, see page 154 of the User's Guide.

(2) Re-install the Paper Cassette Cover.

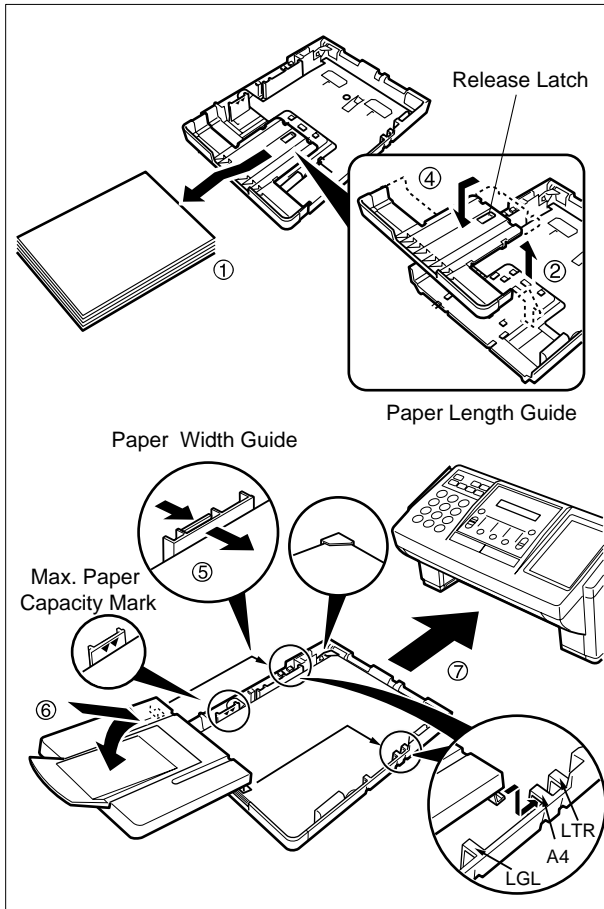
(3) Slide the Paper Cassette into the machine.

8.6 Adjusting the Paper Cassette for the Paper Length

How to Adjust the Paper Cassette for the Paper Length

The factory default Paper Length setting for the Paper Cassette is on Letter size. To change the paper length to A4 or Legal size, follow the steps below.

1



- (1) Remove the paper from the Paper Cassette and place the cassette upside down on a flat surface.
- (2) While pushing down on the release latch, pull out the Paper Length Guide.
- (3) Turn the Paper Cassette upright.
- (4) Insert the Paper Length Guide hooks into the appropriate paper length slots (A4 or Legal) and slide the guide towards the back of the cassette until it locks in place.
- (5) Load the paper into the Paper cassette. Slide the paper width guide to the left until it lightly touches the stack of paper without bending the paper. The paper must fit squarely and firmly between the Paper Width Guide and the right side of tray. If it does not, the paper may feed into the printer incorrectly resulting in a paper jam.

Caution: Make sure that the paper is set under the metal Paper Separation Clips and that it does not exceed the Maximum Paper Capacity Mark. You can load about 250 sheets (20 lb weight). For paper specification, see page 154 of the User's Guide.

- (6) Replace the Paper Cassette Cover to the appropriate paper position (LTR, A4 or LGL).
- (7) Slide the Paper Cassette into the machine.

2 The Recording Paper Size setting of the Fax Parameter No. 23 must match the paper loaded in the cassette. If you change the Recording Paper Size, please change the setting accordingly. (See page 38 of the User's Guide)

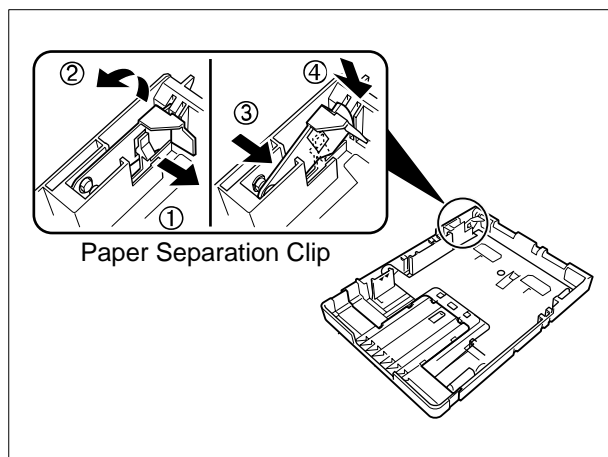
! **Note:** If you forget to change the Recording Paper Size setting in Fax Parameter No. 23 when different paper is installed in the cassette, the unit will Stop printing after the 1st page of an Incoming Fax and display a "PAPER SIZE MISMATCH" error. Then, the Recording Paper size setting automatically adjusts to the proper size and the unit resumes printing the Incoming Fax from the 1st page.

8.7 Adjusting the Paper Cassette for the Paper Width

How to Adjust the Paper Cassette for the Paper Width

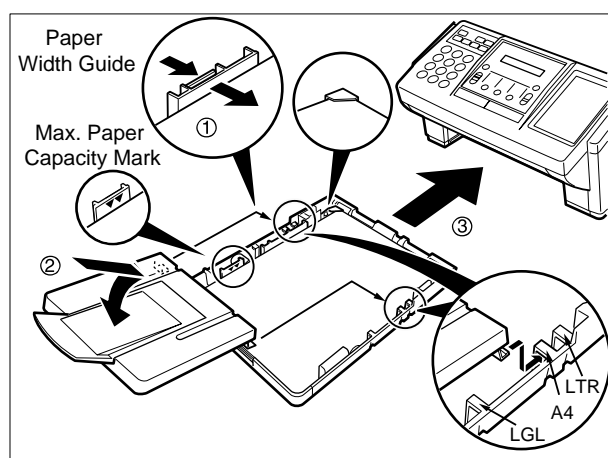
The factory default Paper Width setting for the Paper Cassette is on Letter/Legal size. To change the paper width to A4 size, follow the steps below.

1



- (1) Release the left Paper Separation Clip latch.
- (2) Pull up the Paper Separation Clip to remove it.
- (3) Reposition the Paper Separation Clip into the A(A4) slot.
- (4) Swing the Paper Separation Clip downward to latch it in place.

2



- (1) Load the paper into the Paper Cassette. Slide the paper width guide to the left until it lightly touches the stack of paper without bending the paper. The paper must fit squarely and firmly between the Paper Width Guide and the right side of tray. If it does not, the paper may feed into the printer incorrectly resulting in a paper jam.

Caution: Make sure that the paper is set under the metal Paper Separation Clips and that it does not exceed the Maximum Paper Capacity Mark. You can load about 250 sheets (20 lb weight). For paper specification, see page 154 of the User's Guide.

- (2) Replace the Paper Cassette Cover to the appropriate paper position (LTR, A4 or LGL).
- (3) Slide the Paper Cassette into the machine.

3

The Recording Paper Size setting of the Fax Parameter No. 23 must match the paper loaded in the cassette. If you change the Recording Paper Size, please change the setting accordingly. (See page 38 of the User's Guide)



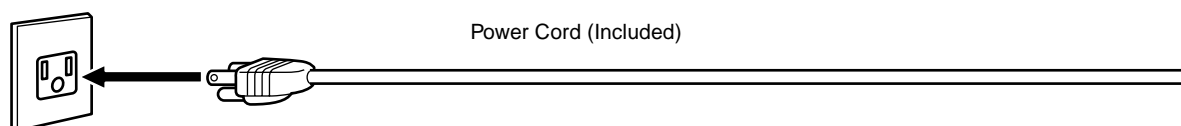
Note: If you forget to change the Recording Paper Size setting in Fax Parameter No. 23 when different paper is installed in the cassette, the unit will Stop printing after the 1st page of an Incoming Fax and display a "PAPER SIZE MISMATCH" error. Then, the Recording Paper size setting automatically adjusts to the proper size and the unit resumes printing the Incoming Fax from the 1st page.

8.8 Connecting the Telephone Line Cable and Power Cord

■ Power Cord

Plug one end of the power cord into an ordinary 3 prong AC outlet and the other end into the receptacle on the rear of the machine.

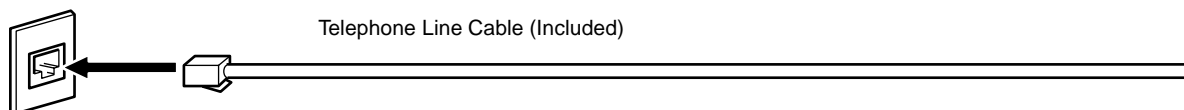
Warning : This apparatus must be properly grounded through an ordinary 3 prong AC outlet.
Do not break off the earth (ground) prong to fit a 2 prong outlet.



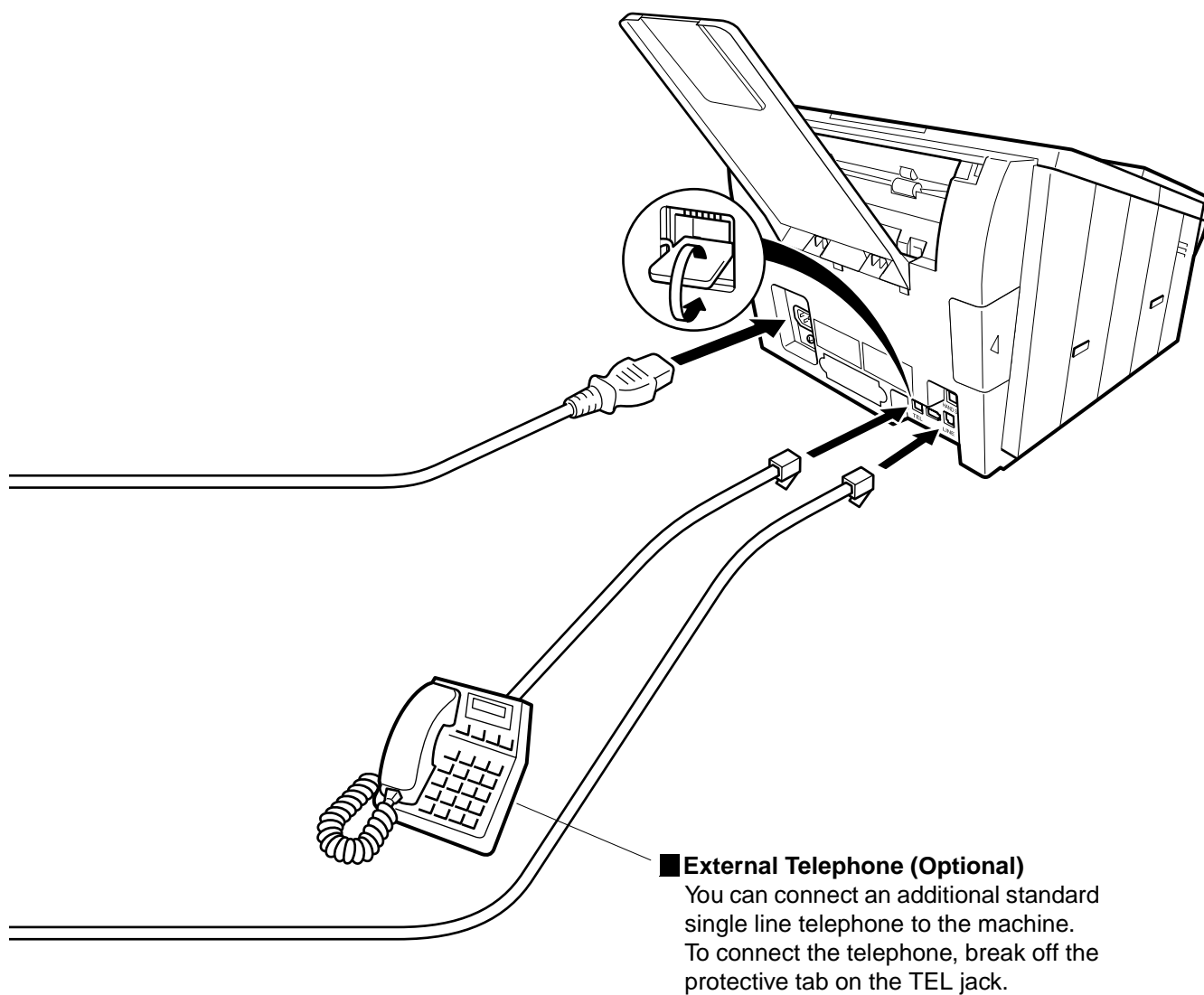
■ Telephone Line Cable

Plug one end of the telephone line cable into the "RJ-11C" telephone jack supplied by the telephone company and the other end into the LINE jack on the Rear side of the machine

RJ-11C Telephone Jack



! **Note:** 1. Your machine uses little power and you should keep it ON at all times. If the power is turned OFF for too long, the clock contents may be lost.

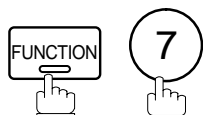


8.9 Customizing Your Machine

Your facsimile machine has a variety of adjustable Fax Parameters. These parameters, listed in the Parameter Table, are preset for you and do not need to be changed. If you do want to make a change, read the table carefully. Some parameters, such as the Resolution, Contrast, and Verification Stamp parameters, can be temporarily changed by simple key operation just before a transmission is made. When the transmission ends, however, these parameters return to their preset values (Home position). Other parameters can only be changed by the procedure described below.

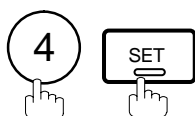
Setting the Fax Parameters

1



```
SET MODE      (1-6)
ENTER NO. OR ∨ ^
```

2



```
FAX PARAMETER(01-99)
NO.=■
```

3

Enter Fax Parameter number from the Parameter Table.
(See pages 257 to 260)

Ex: ① ① for **CONTRAST**

```
FAX PARAMETER(01-99)
NO.=01
```

4



```
01 CONTRAST
1:NORMAL
```

5

Enter the new setting value.

Ex: ② for **LIGHTER**

```
01 CONTRAST
2:LIGHTER
```

6



```
02 RESOLUTION
1:STANDARD
```

To set another parameter, press **CLEAR** to return to step 3 or press **STOP** to return to standby.



Note: 1. To scroll the Fax Parameters in Step 2 or 4, press ▼ or ▲.
2. To print out a Fax Parameter List, see page 135 of the User's Guide.
3. If you press ▼ or ▲ in step 5, the new setting will be canceled.

Fax Parameter Table

No.	Parameter	Setting Number	Setting	Comments
01	CONTRAST	*1	Normal	Setting the home position of the CONTRAST key.
		2	Lighter	
		3	Darker	
02	RESOLUTION	*1	Standard	Setting the home position of the RESOLUTION key.
		2	Fine	
		3	S-Fine	
04	STAMP	*1	Off	Setting the home position of the STAMP key. To select the stamp function when document is stored in memory, see Fax Parameter No. 28.
		2	On	
05	MEMORY	1	Off	Setting the home position of the MEMORY key.
		*2	On	
06	DIALING METHOD	1	Pulse	Selecting the Dialing method.
		*2	Tone	
07	HEADER PRINT	*1	Inside	Selecting the printing position of the header. Inside : Inside TX copy area. Outside : Outside TX copy area. No print : Header is not printed.
		2	Outside	
		3	No print	
08	HEADER FORMAT	*1	Logo, ID No.	Selecting the header format.
		2	From To	
09	RCV'D TIME PRINT	*1	Invalid	Selecting whether the machine prints the received date & time, remote ID, percentage of reduction and page number on the bottom of each received page.
		2	Valid	
10	KEY/BUZZER VOLUME	1	Off	Selecting the volume of the Key/Buzzer tone.
		*2	Soft	
		3	Loud	
12	COMM. JOURNAL	1	Off	Selecting the home position of printout mode for COMM. Journal Off/Always/INC. Off : No printout Always : Always prints out Inc. only : Printout when communication has failed.
		2	Always	
		*3	Inc. only	
13	AUTO JOURNAL PRINT	1	Invalid	Selecting whether the machine prints the journal automatically after every 32 transactions.
		*2	Valid	
15	IN MODE	*1	Tel	Selecting IN (attended) mode as either Telephone Mode or Fax / Tel Auto Switching Mode.
		2	Fax/Tel SW	
16	OUT MODE	*1	Fax	Selecting OUT (unattended) mode as either Fax Mode or TAM interface Mode.
		2	TAM I/F	

Continued on the next page.

No.	Parameter	Setting Number	Setting	Comments
18	OPERATOR CALL TIMER	*1	20 sec.	Selecting the length of time that your machine signals (rings) for an incoming voice call in Fax/Tel Auto Switching mode. (See page 64 of the User's Guide)
		2	30 sec.	
		3	40 sec.	
		4	50 sec.	
19	OGM LENGTH (TAM I/F)	1	1 sec.	Setting for the OGM length of your TAM from 1 to 60 seconds. The machine will not start to detect SILENCE until the time setting has lapsed. (Default = 20 sec.)
		---	---	
		60	60 sec.	
20	SILENT DET. (TAM I/F)	1	Invalid	Selecting the Silent Detection Mode.
		*2	Valid	
22	SUBSTITUTE RCV	1	Invalid	Selecting whether the machine receives to memory when recording paper runs out, toner runs out or recording paper is jammed.
		*2	Valid	
23	RECORDING PAPER SIZE	1	A4	Selecting the recording paper size installed in your machine.
		*2	Letter	
		3	Legal	
24	PRINT REDUCTION	1	Fixed	Selecting print reduction mode. Fixed : Reduce received document according to setting of Parameter No. 25. Auto : Reduce received document according to the length of received documents.
		*2	Auto	
25	REDUCTION RATIO	70	70%	Selecting fixed print reduction ratio from 70% to 100%. This parameter functions only when fixed print reduction is selected on Fax Parameter No. 24.
		----	----	
		100	100%	
26	POLLING PASSWORD		(----	Setting a 4-digit password for secured polling. (See page 73 of the User's Guide)
27	POLLED FILE SAVE	*1	Invalid	Selecting whether the machine retains the polled document in memory even after the document is polled once.
		2	Valid	
28	STAMP AT MEM. XMT	1	Invalid	Selecting whether the machine stamps the original documents when storing the documents into memory. (depending on the Stamp setting on the Control Panel)
		*2	Valid	
31	INCOMPLETE FILE SAVE	*1	Invalid	Selecting whether the machine retains the document in memory if the document is not successfully transmitted.
		2	Valid	
32	COPY REDUCTION	1	Manual	Selecting whether the machine performs the copy reduction ratio automatically or manually. Manual : The machine will prompt you for the Zoom ratio (100% to 70%) when making copies. Auto : The machine will automatically determine the reduction ratio according to the length of the original document.
		*2	Auto	

Continued on the next page.

No.	Parameter	Setting Number	Setting	Comments
34	ENERGY SAVER MODE	1	Off	To reduce the power consumption in standby, select either Energy-Saver or Sleep mode and specify the Delay Time (1 to 120 minutes) for the machine to enter into the selected mode. The Delay Timer setting is only available in the Energy-Saver or Sleep Modes.
		2	Energy-Saver	Off : The unit will remain in standby mode and consume more energy than when in Energy-Saver or Sleep modes. Energy-Saver Mode : Saves energy by consuming less power than when in standby mode by turning off the fuser unit after the specified time.
		*3	Sleep	Sleep Mode : This is the lowest power state that the machine enters after the specified time without actually turning off.
35	DAYLIGHT TIME	1	Invalid	Selecting whether the clock adjusts for Daylight Saving Time automatically. The built-in clock will advance 1 hour at 2:00 am on the first Sunday in April and fallback 1 hour at 2:00 am on the last Sunday in October.
		*2	Valid	
36	RING PATTERN DETECT (DRD) (See Note 2)	*1	Invalid	All ring patterns.
		2	Valid	Select a ring pattern for automatic answering. 1: A Standard ring pattern. 2: B Double ring pattern. 3: C Triple ring pattern (Short-Short-Long). 4: D All other triple ring pattern, except the type C described above.
37	RCV TO MEMORY		(----	Enter a 4-digit password used to print out the received document in memory by using F8-5 (RCV TO MEMORY). When F8-5 is set to On, this parameter will not be shown on the LCD display. (See page 92 of the User's Guide)
38	ACCESS CODE		(----	Enter a 4-digit Access Code to secure the machine from unauthorized use. (See page 90 of the User's Guide)
40	RELAY XMT REQUEST	*1	Invalid	Selecting whether the machine accepts and performs Relay XMT Request. (See page 115 of the User's Guide)
		2	Valid	
42	CONF. POLLED FILE SAVE	*1	Invalid	Selecting whether the machine saves the confidential polled file even after the file is polled once.
		2	Valid	
43	PASSWORD-XMT	*1	Off	Setting a 4-digit XMT-Password and selecting whether the machine performs and checks the XMT-Password of the receiving station when transmitting. (See page 101 of the User's Guide)
		2	On	
44	PASSWORD-RCV	*1	Off	Setting a 4-digit RCV-Password and selecting whether the machine performs and checks the RCV-Password of the transmitting station when receiving. (See page 102 of the User's Guide)
		2	On	
46	SELECT RCV	*1	Invalid	Selecting whether the machine performs selective reception. (See page 99 of the User's Guide)
		2	Valid	
47	REMOTE RECEPTION	1	Invalid	Selecting whether or not the machine accepts remote reception command. (See page 63 of the User's Guide)
		*2	Valid	
52	DIAGNOSTIC PASSWORD		(----	Setting the password for Remote Diagnostic Mode. Please ask your Panasonic Authorized Dealer for details.
53	SUB-ADDRESS PASSWORD		(----	Setting a 20-digit password for secured sub-address communication.

Continued on the next page.

No.	Parameter	Setting Number	Setting	Comments
54	FAX FORWARD	*1	Invalid	Selecting whether the machine performs Fax Forwarding to the specified destination . (See page 97 of the User's Guide)
		2	Valid	
56	COVER SHEET	*1	Off	Setting the home position of the Cover Sheet parameter in the Select Mode. (See page 95 of the User's Guide)
		2	On	
58	LANGUAGE	*1	A-English	Selecting the language to be shown on the display and reports.
		2	C-French	
		3	Spanish	
65	PRINT COLLATION	1	Invalid	Selecting whether the machine prints out documents in sequence. (See page 69 of the User's Guide)
		*2	Valid	
99	MEMORY SIZE (Flash Memory)	-	-	Displays the amount of base and optional memory installed. (Base Memory + Optional Memory)



Note: 1. Setting number marked with an asterisk (*) indicates the factory standard setting.


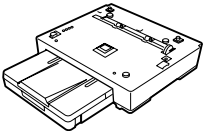
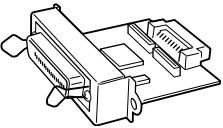

2. This parameter supports an optional telephone service "Distinctive Ring Service" provided by your local telephone company. It allows up to 4 different telephone numbers to be assigned on a single telephone line with a distinctive ring for each telephone number. By selecting the appropriate ring pattern associated with the telephone number assigned for your fax machine. It can differentiate and answer the incoming call on the fax number. All other calls on the other telephone numbers will not be answered. This optional service from your local phone company is also called Custom Ringing, Distinctive Ringing, Ident-a-call, Ident-a-ring, Personalized Ringing, RingMaster, RingMate, Selective Ringing, Smart Ring or something similar. Check with your local telephone company on the availability of this service in your area.

9 Options and Supplies


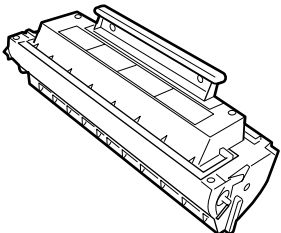
9.1 Options and Supplies

Please contact your local Panasonic dealer for availability.

1. Options

Order No.	Picture	Description	Available Models
UE-403117		Handset Kit	UF-585 UF-595
UE-409070		250 Sheet Letter / Legal / A4 Size Paper Cassette with the Feeder Unit	UF-595
UE-404071		Parallel Port Interface Kit (used for Printer, Scanner or PC Interface)	UF-585 UF-595
UE-410045		Expansion Flash Memory Card, 1 MB	UF-585 UF-595
UE-410046		Expansion Flash Memory Card, 2 MB	
UE-410047		Expansion Flash Memory Card, 4 MB	

2. Supplies

Order No.	Picture	Description	Available Models
DZHT000027		Verification Stamp	UF-585 UF-595
UG-3350		Toner Cartridge	UF-585 UF-595

9.2 Installing Optional 250 Sheet Paper Cassette (UE-409070)

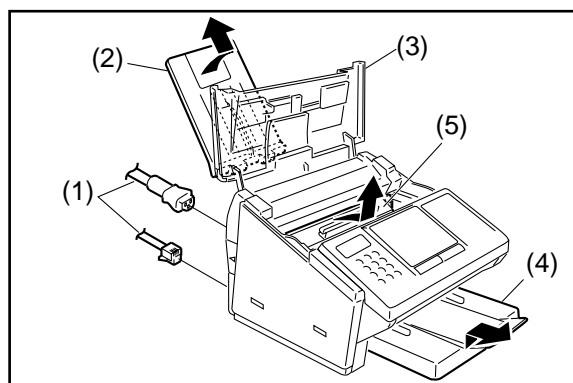
1. Contents

Qty.	Description	Part No.	Remarks
1	250 Sheet Paper Cassette with Feeder Unit	UE-409070	

2. Installation

Note:

Install this Feeder Unit as the 2nd Feeder Unit only.



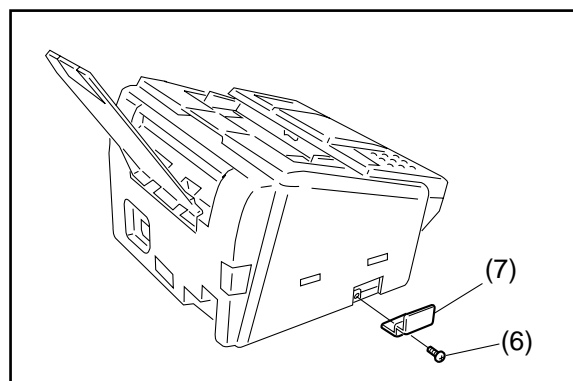
(1) Disconnect the **Telephone Line Cable** and the **Power Cord**.

(2) Remove the **Recording Paper Tray Assembly**.

(3) Open the **Printer Cover**.

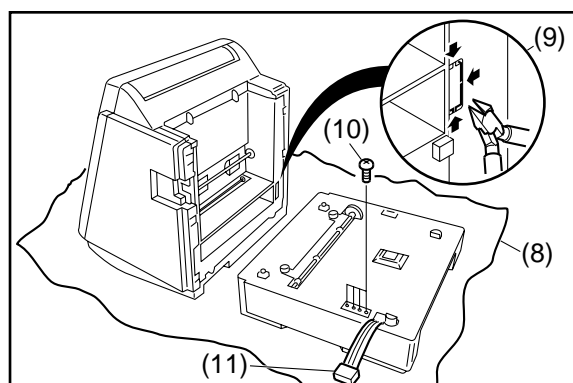
(4) Remove the **Paper Cassette** from the machine.

(5) Remove the **Toner Cartridge** from the machine.



(6) Remove 1 **Screw (B1)**.

(7) Remove the **Connector Access Cover (114)**.

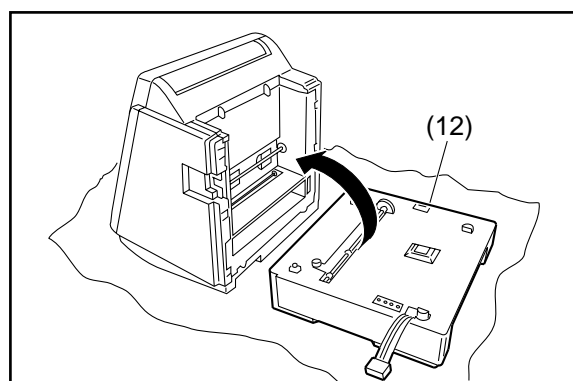


(8) Place the machine on its **Rear side** over a clean cloth to prevent damaging the **Rear Cover**.

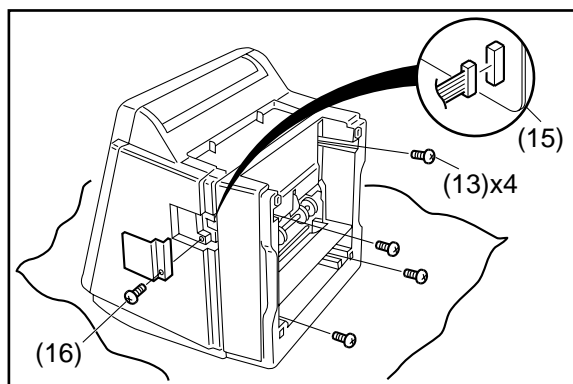
(9) Break off the protective tab on the machine.

(10) Remove 4 **Screws** from the top of the 250 Sheet Paper Cassette.

(11) Remove the shipping tape and place the **CST2-CSTSNS2 Harness (927)** to the outside of the cassette.



(12) Insert the 250 Sheet Paper Cassette into the machine.



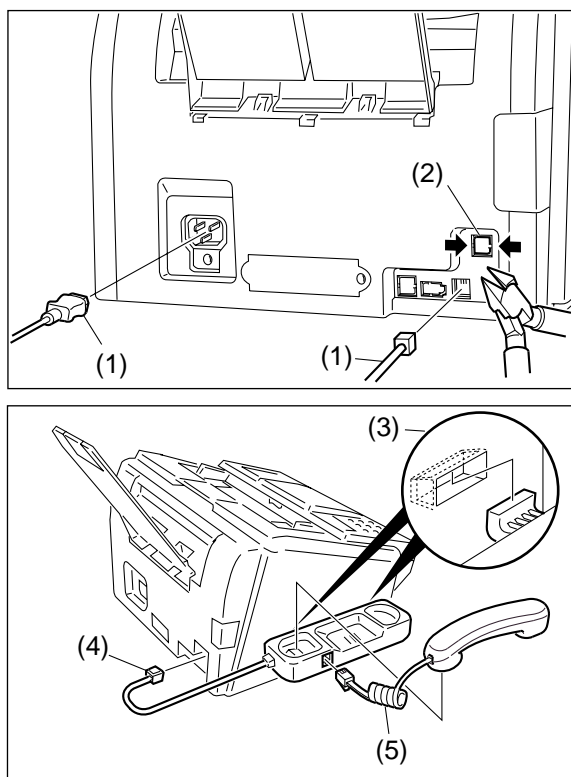
- (13) Secure the 250 Sheet Paper Cassette with the 4 screws removed in step 10.
- (14) Place the machine upright.
- (15) Connect the **CST2-CSTSNS2 Harness** (927) into the **Connector CN66** on the LPC PC Board.
- (16) Re-install the **Connector Access Cover**.
- (17) Re-install the **Recording Paper Tray Assembly, Paper Cassettes** and the **Toner Cartridge**.
- (18) Re-connect the **Telephone Line Cable** and the **Power Cord**.
- (19) Print some pages from the Optional Paper Cassette to confirm its operation.

9.3 Installing Handset Kit (UE-403117)

1. Contents

Qty.	Description	Part No.	Remarks
1	Handset	DZDU000031	
1	Handset Cord	DZFN000066	
1	Cradle Assembly	DZML000132	

2. Installation



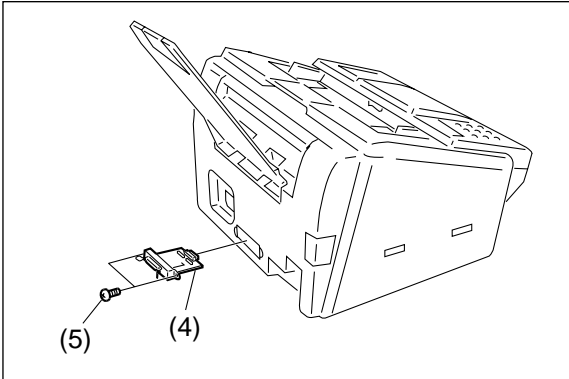
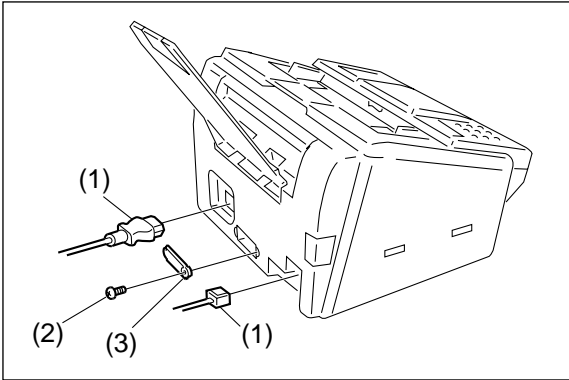
- (1) Disconnect the **Power Cord** and the **Telephone Line Cable**.
- (2) Break off the protective tab on the **HANDSET Jack** on the machine.
- (3) Hook the projections of the Cradle Assembly into the holes on the Left Cover.
- (4) Connect the **Cradle Assembly Cable** to the **HANDSET Jack** on the rear of the machine.
- (5) Connect the **Handset Cord**.
- (6) Re-connect the **Telephone Line Cable** and the **Power Cord**.

9.4 Installing Parallel Port Interface Kit (UE-404071)

1. Contents

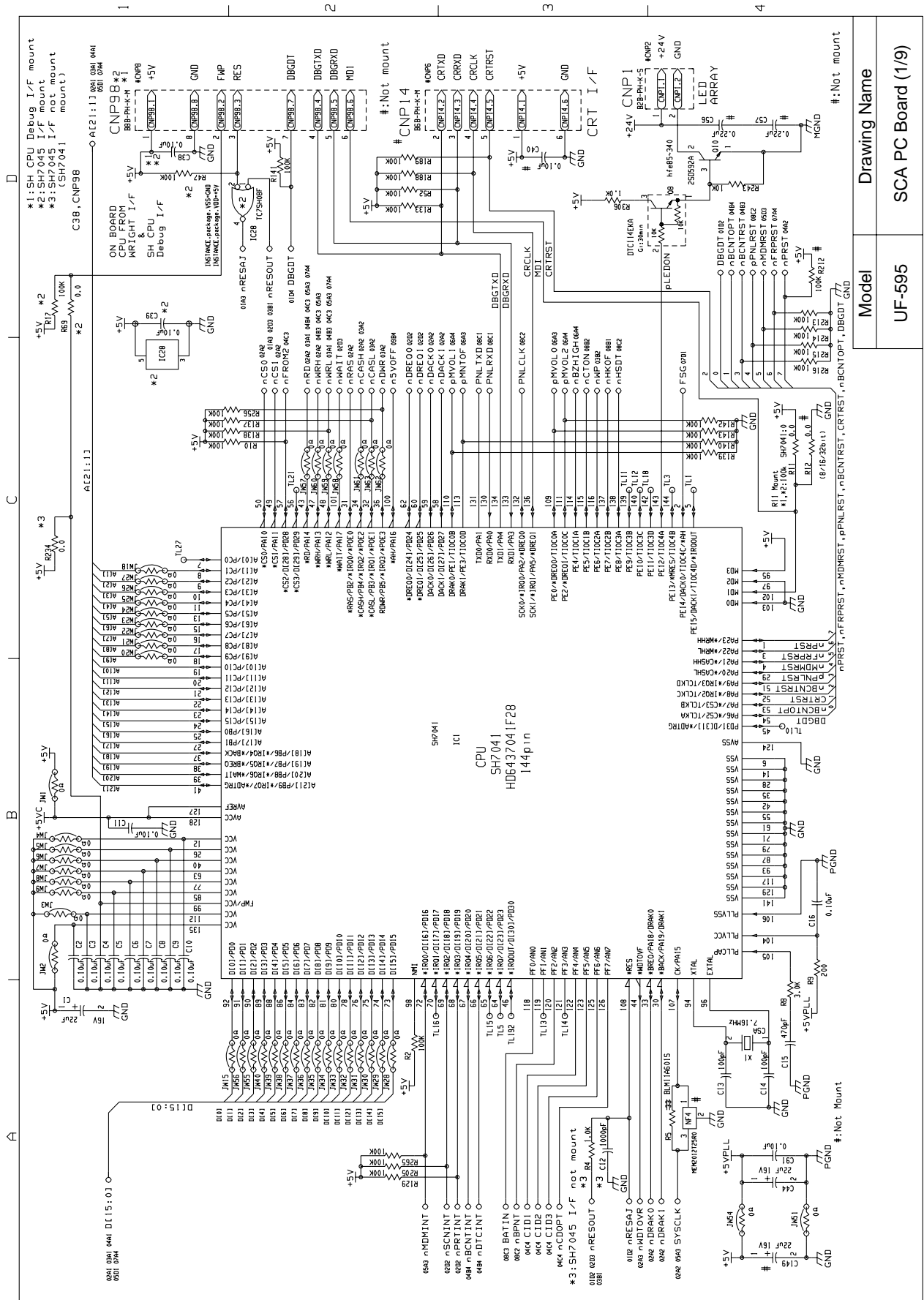
Qty.	Description	Part No.	Remarks
1	Parallel Port Interface Assembly	DZHP002990	
1	Screw	DZPB000007	
1	Printer Driver (Floppy Disk 2HD)	DZQW000113	1 disk
1 set	Scanner Driver (Floppy Disk 2HD)	DZQW000114	4 disks

2. Installation



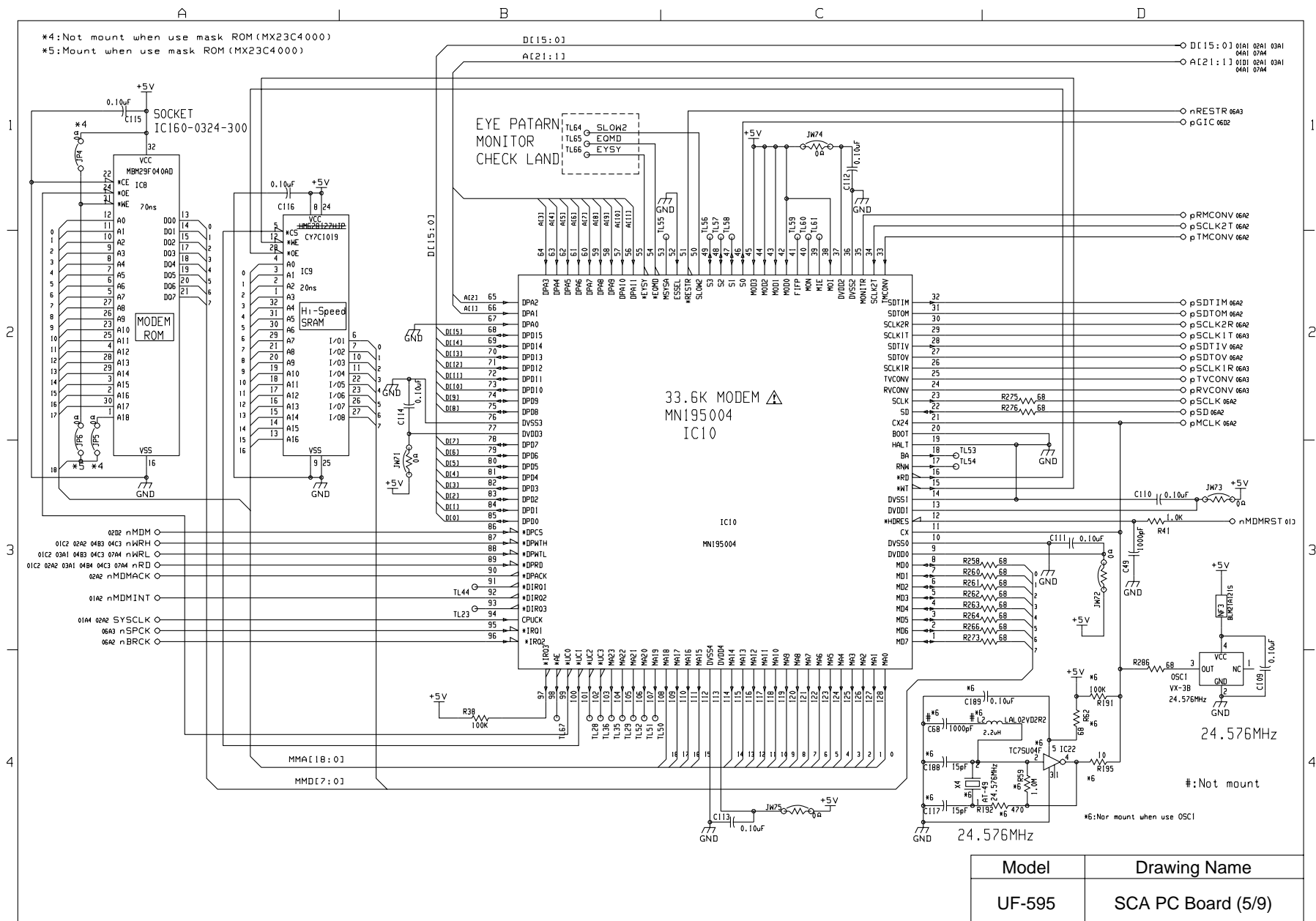
- (1) Disconnect the **Power Cord** and the **Telephone Line Cable**.
- (2) Remove 1 **Screw**.
- (3) Remove the **Parallel Port Interface Cover**.
(Save it for future use if the Parallel Port Interface Assembly is removed)
- (4) Install the **Parallel Port Interface Assembly**.
- (5) Install 2 **Screws**.
(One screw is included with the kit and the other was removed in Step 2 above)
- (6) Re-connect the **Telephone Line Cable** and the **Power Cord**.

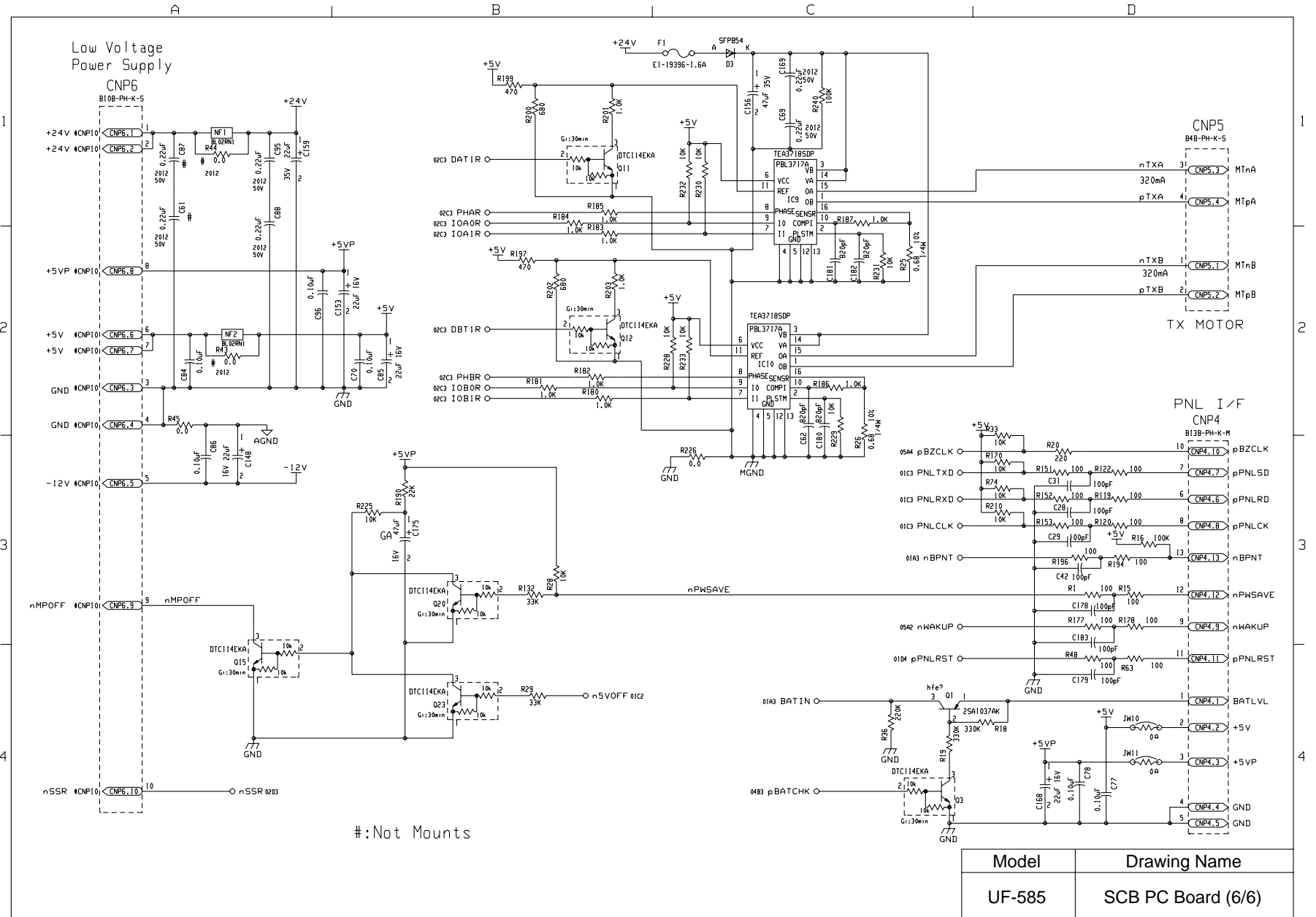
10.1 SCA PC Board (UF-595)



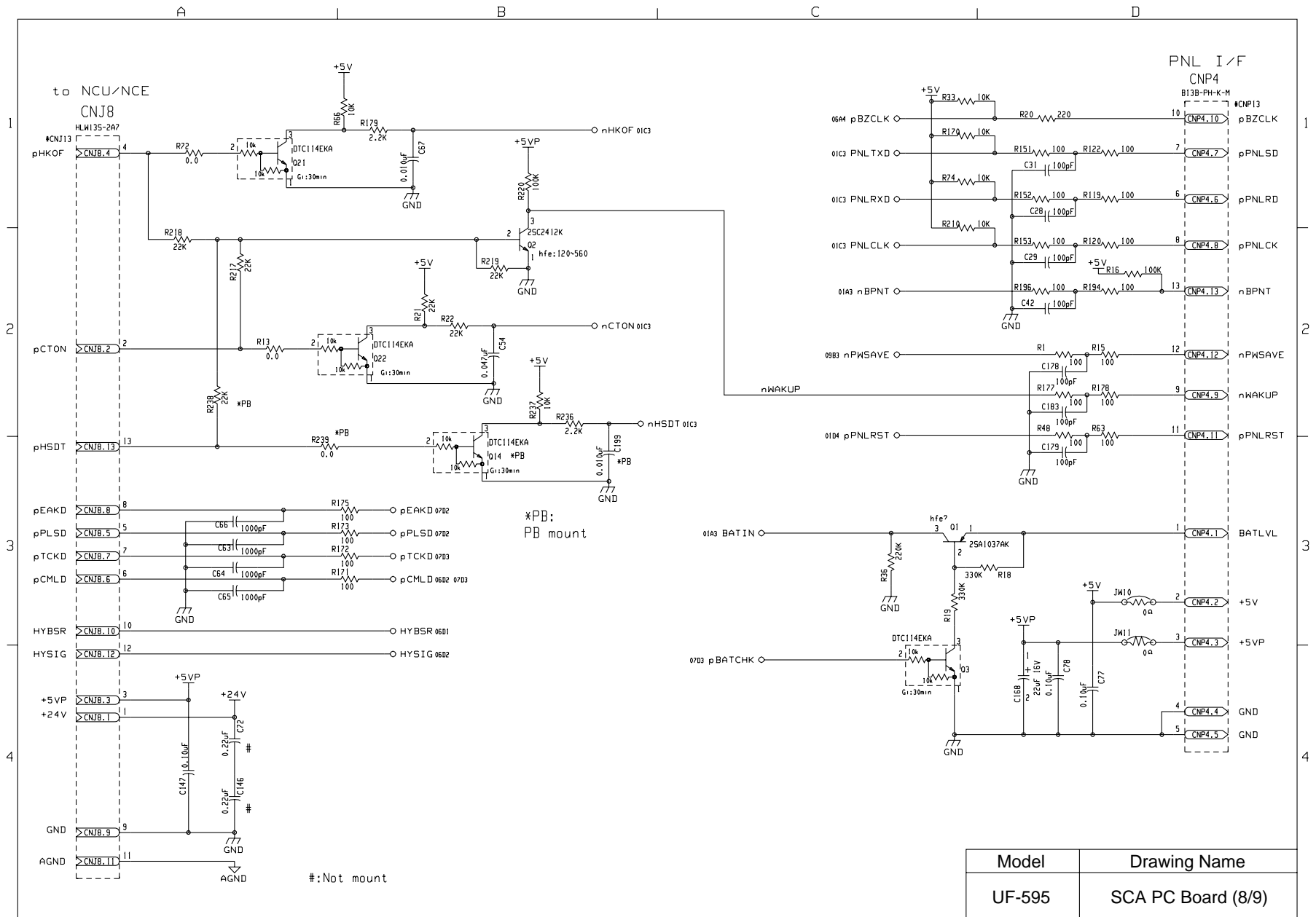
Model	Drawing Name
UF-595	SCA PC Board (2/9)

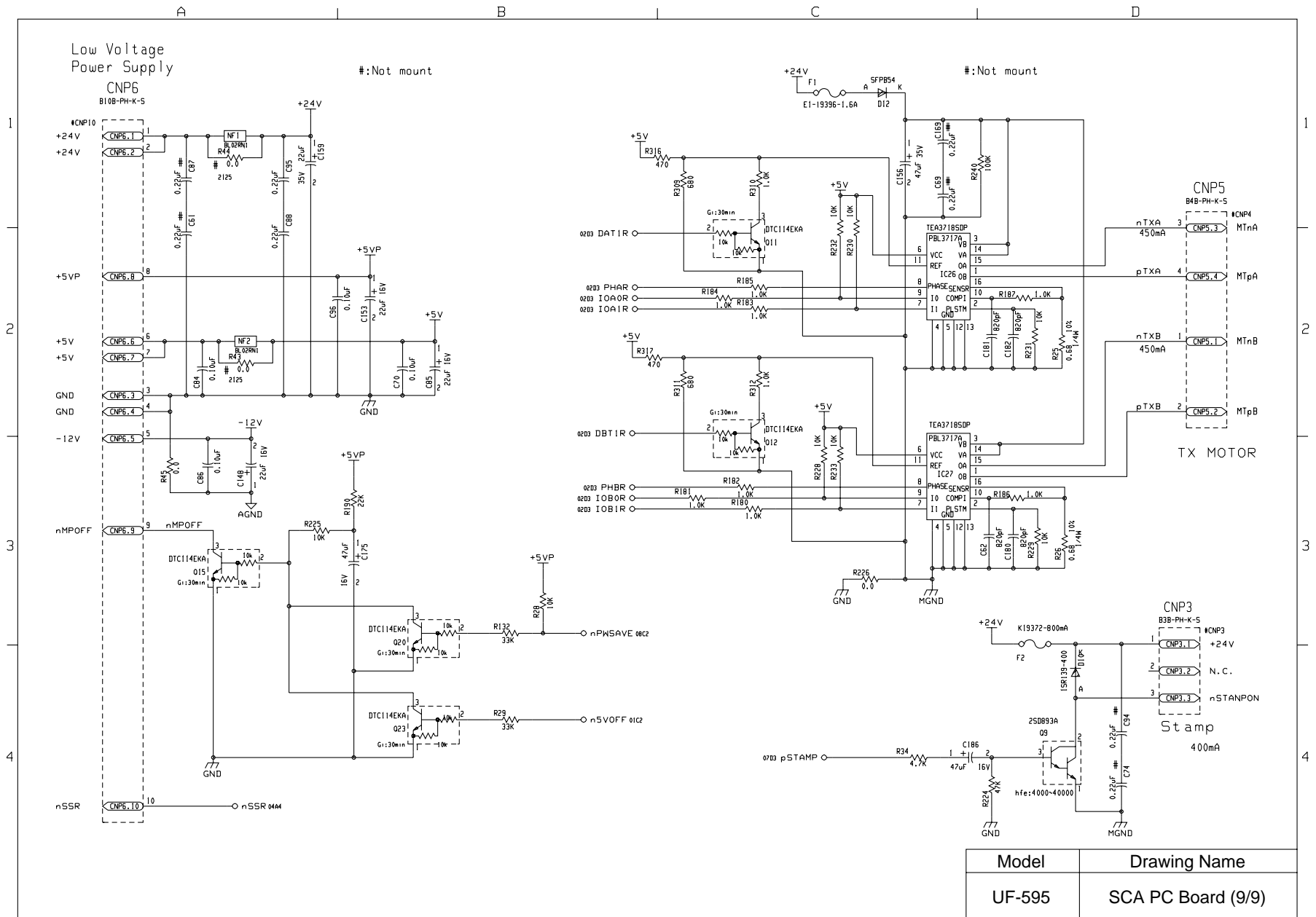
Model	Drawing Name
UF-595	SCA PC Board (4/9)

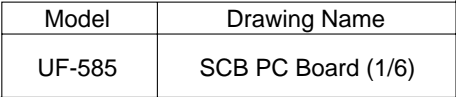




Model	Drawing Name
UF-595	SCA PC Board (7/9)

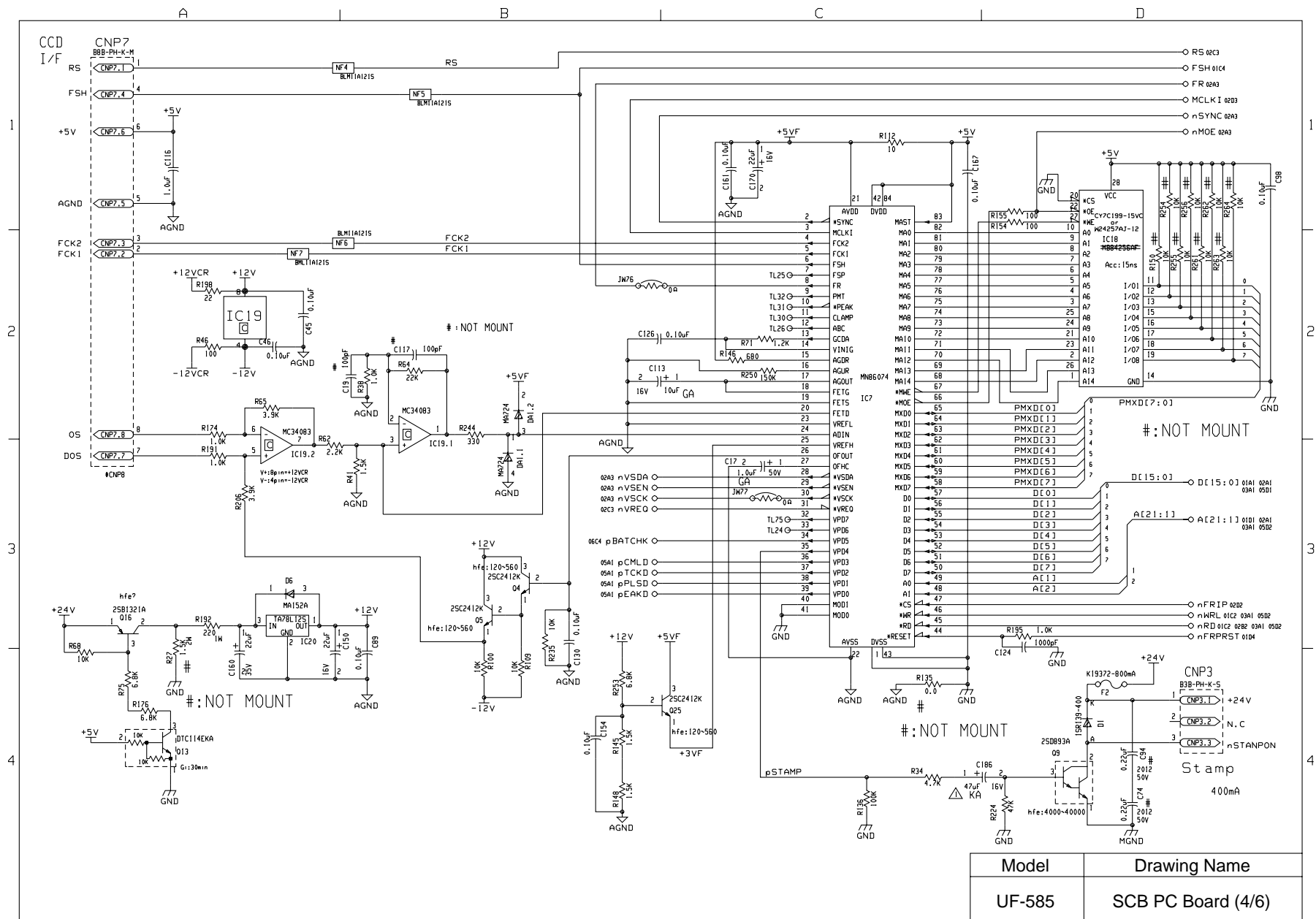




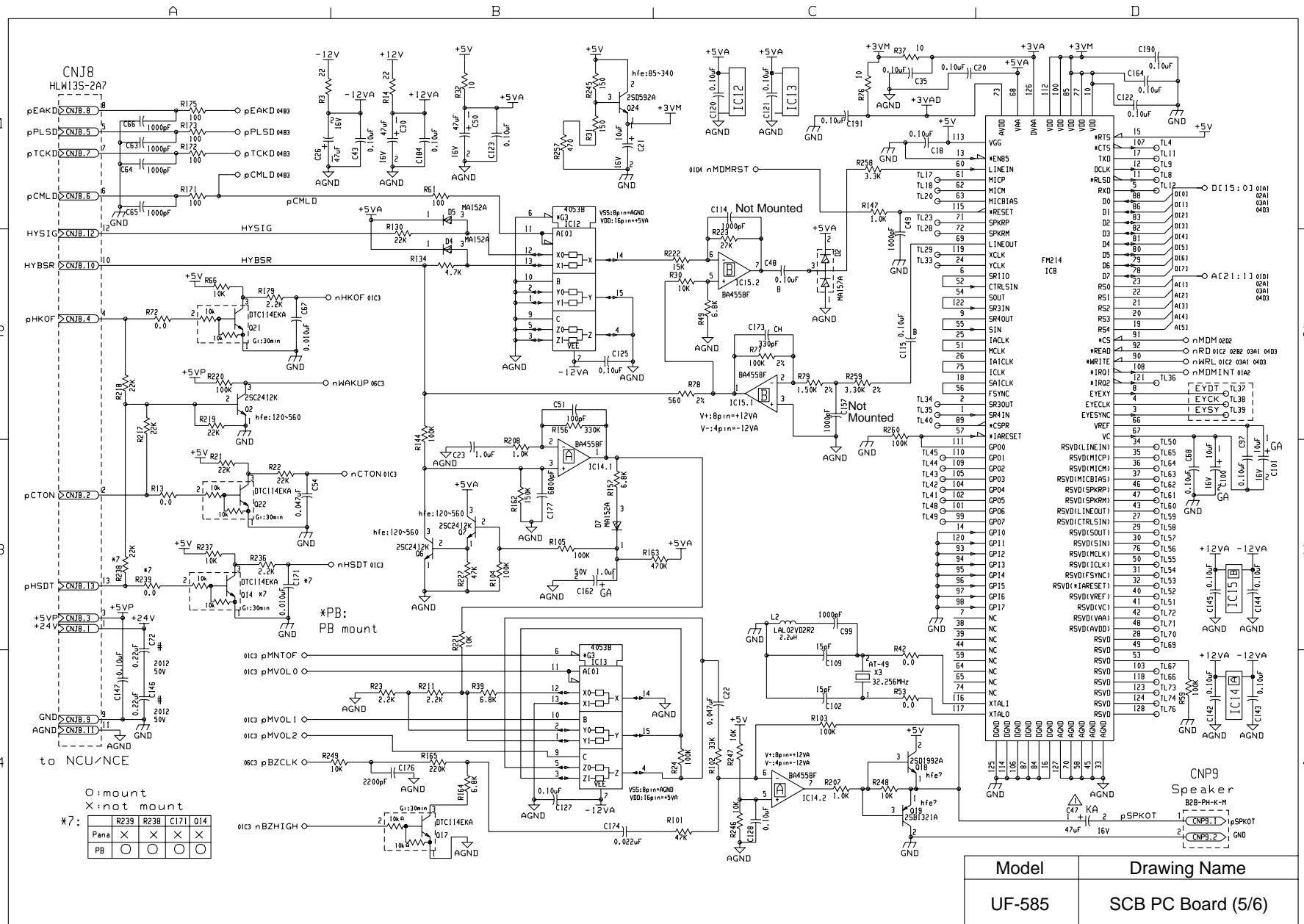


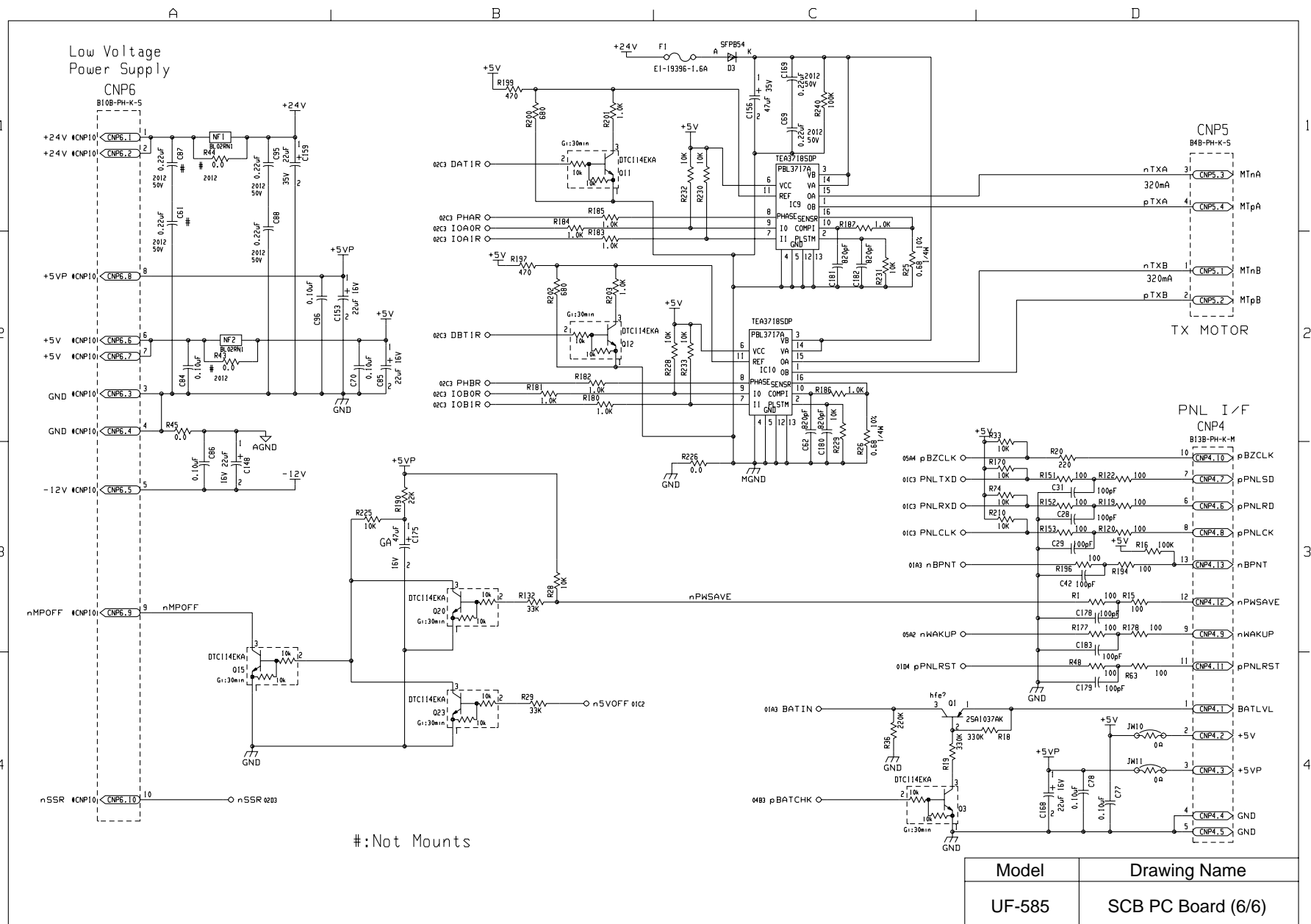
Model	Drawing Name
UF-585	SCB PC Board (2/6)

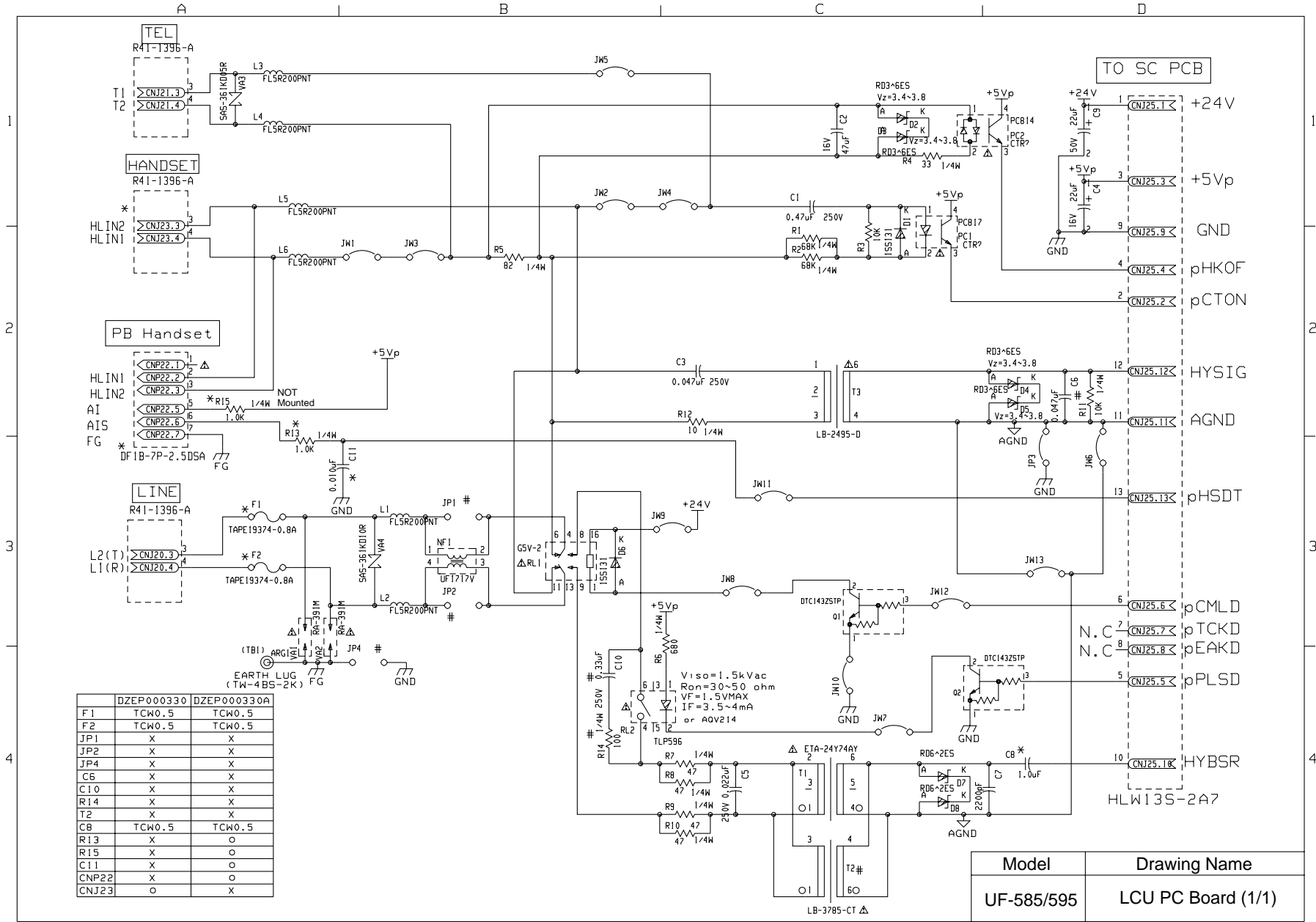
Model	Drawing Name
UF-585	SCB PC Board (3/6)

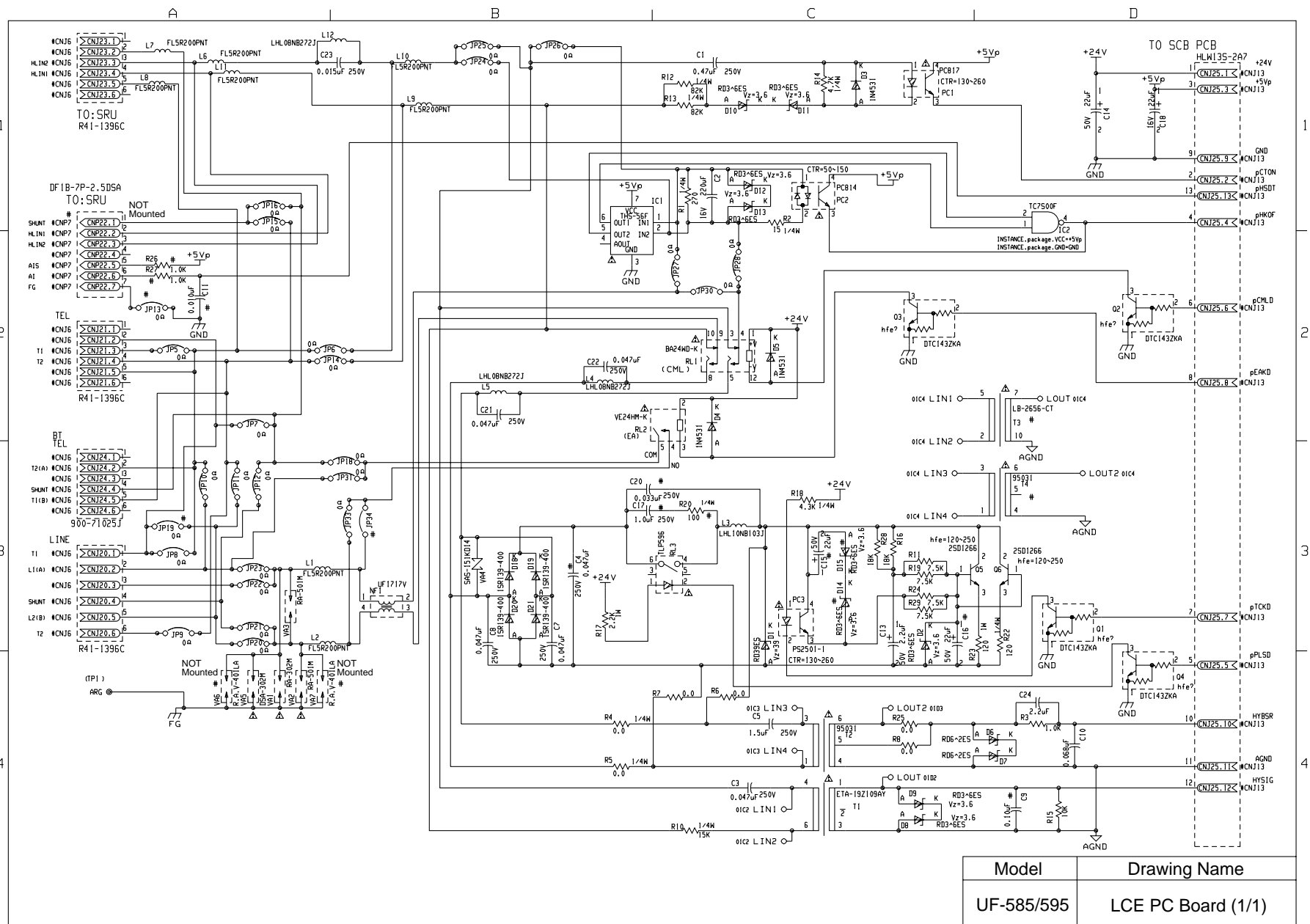


Model	Drawing Name
UF-585	SCB PC Board (4/6)

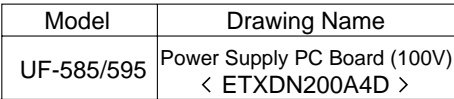




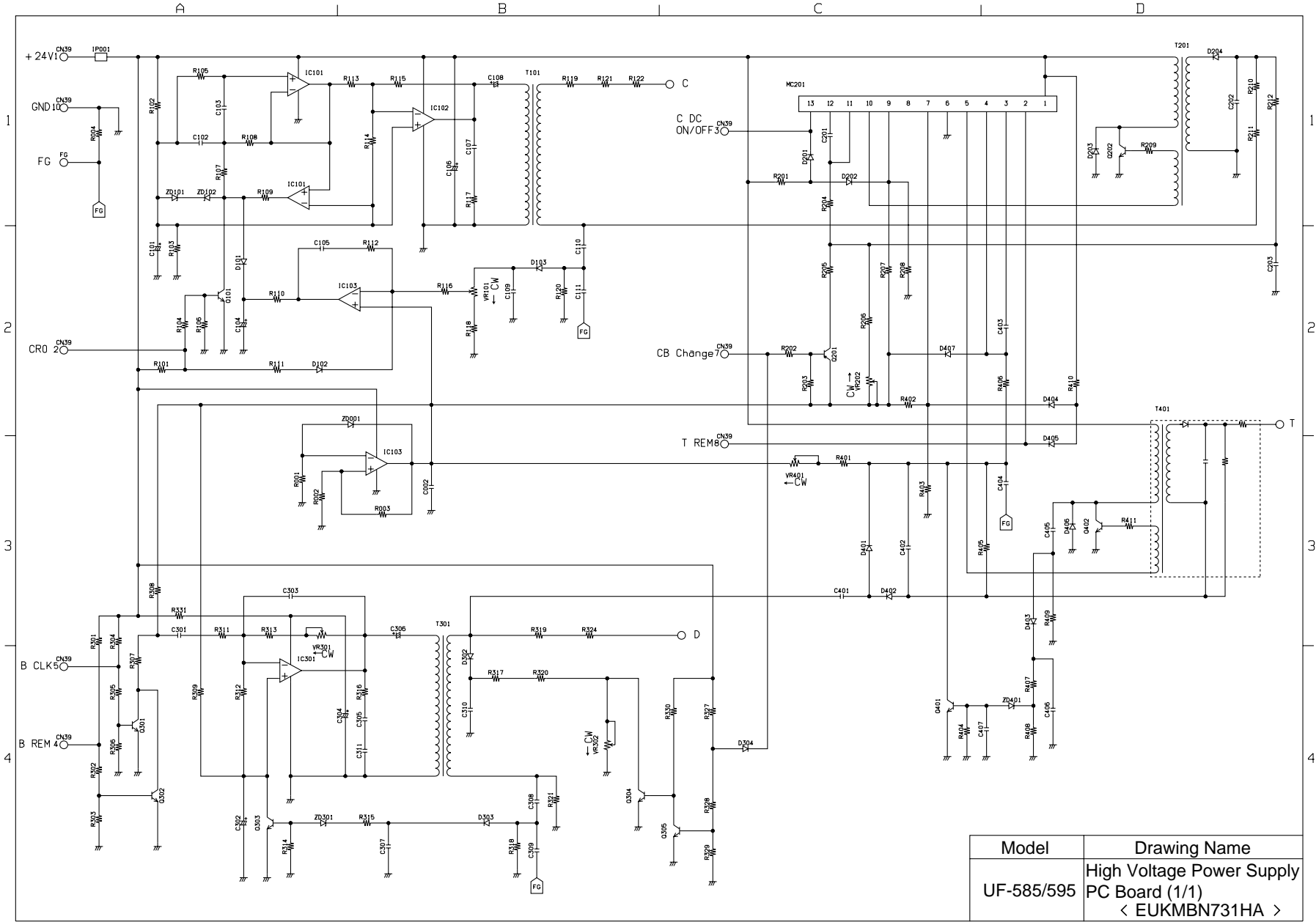


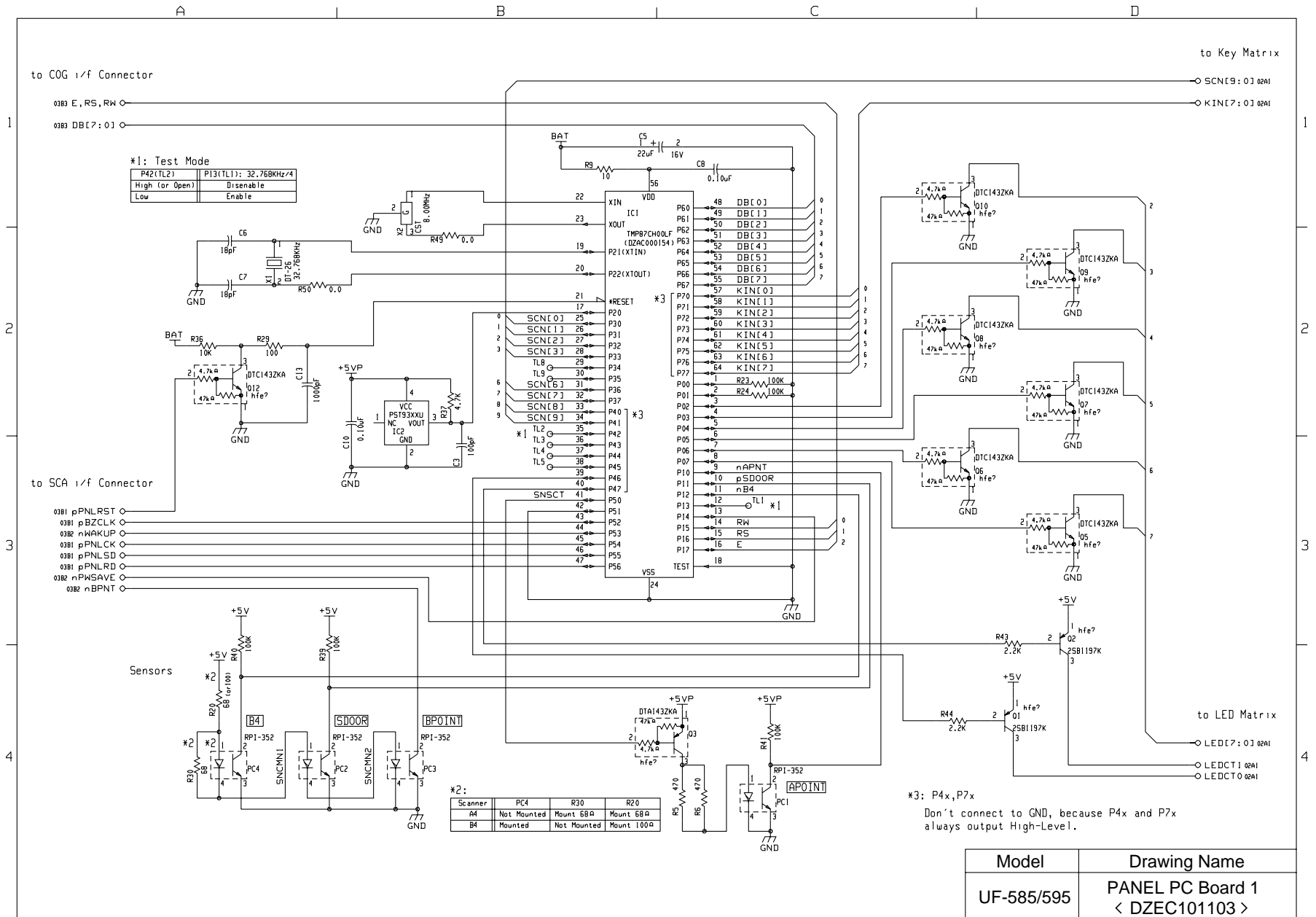


1
—
2
—
3
—
4

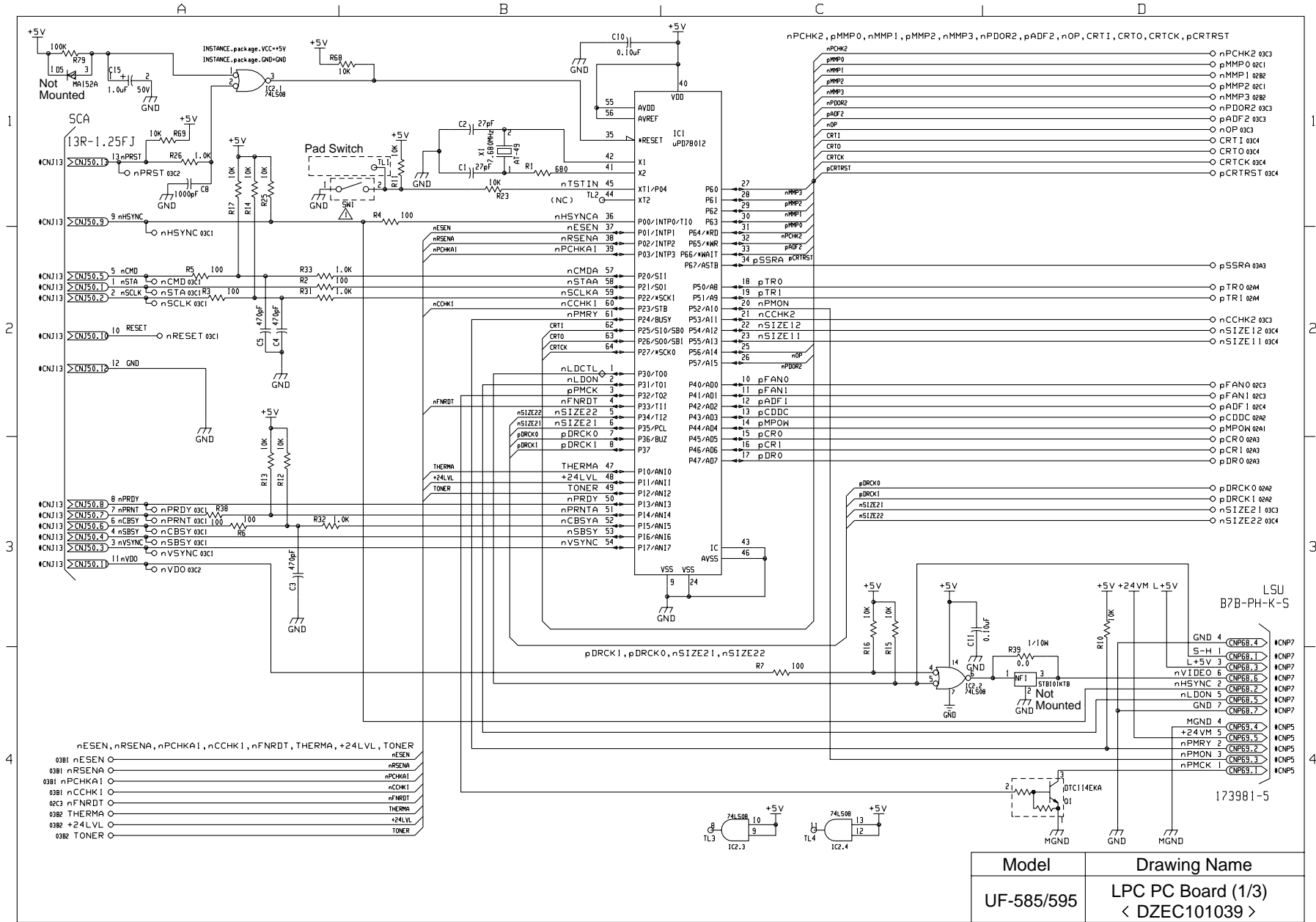


10.5 High Voltage Power Supply PC Board

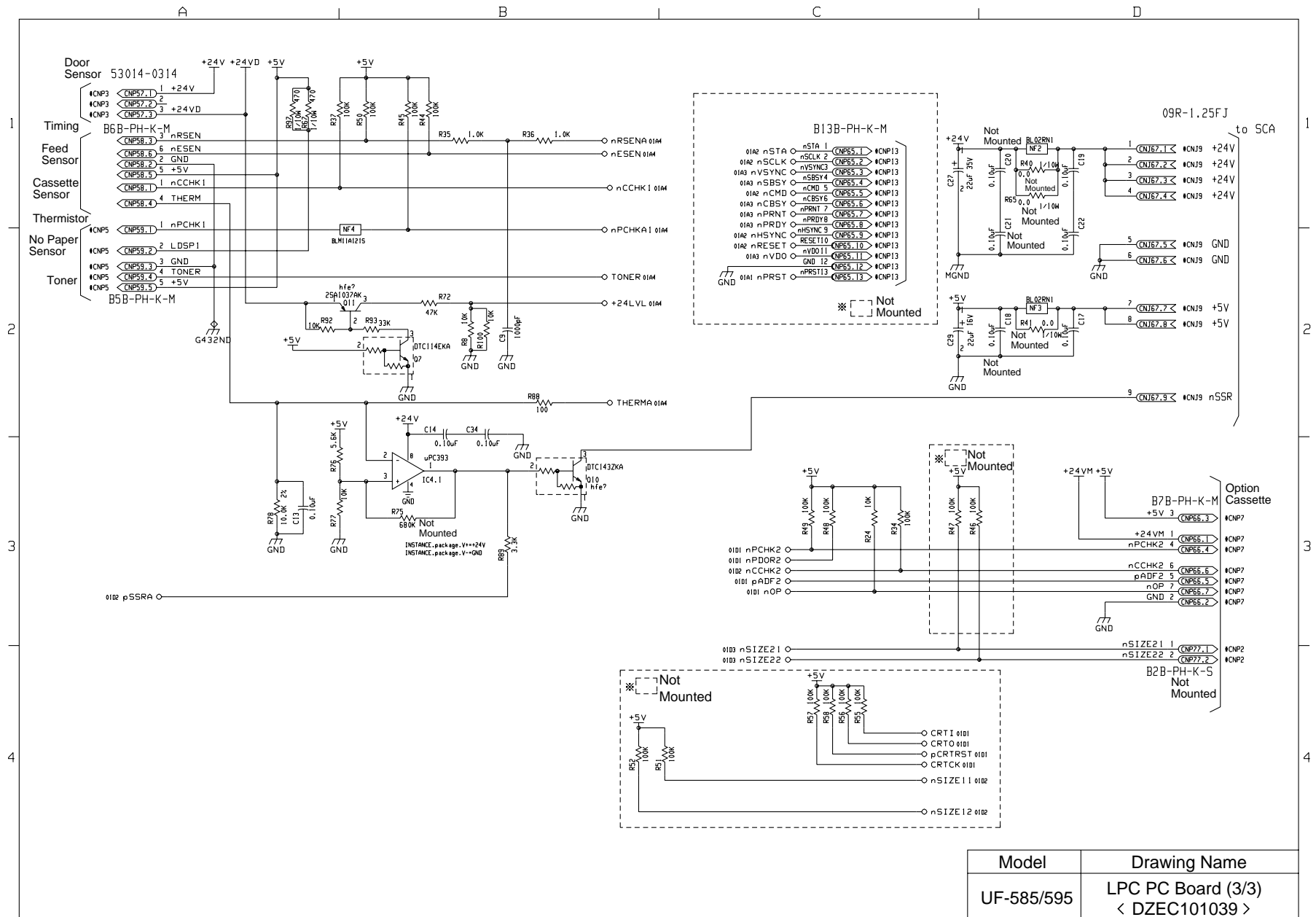


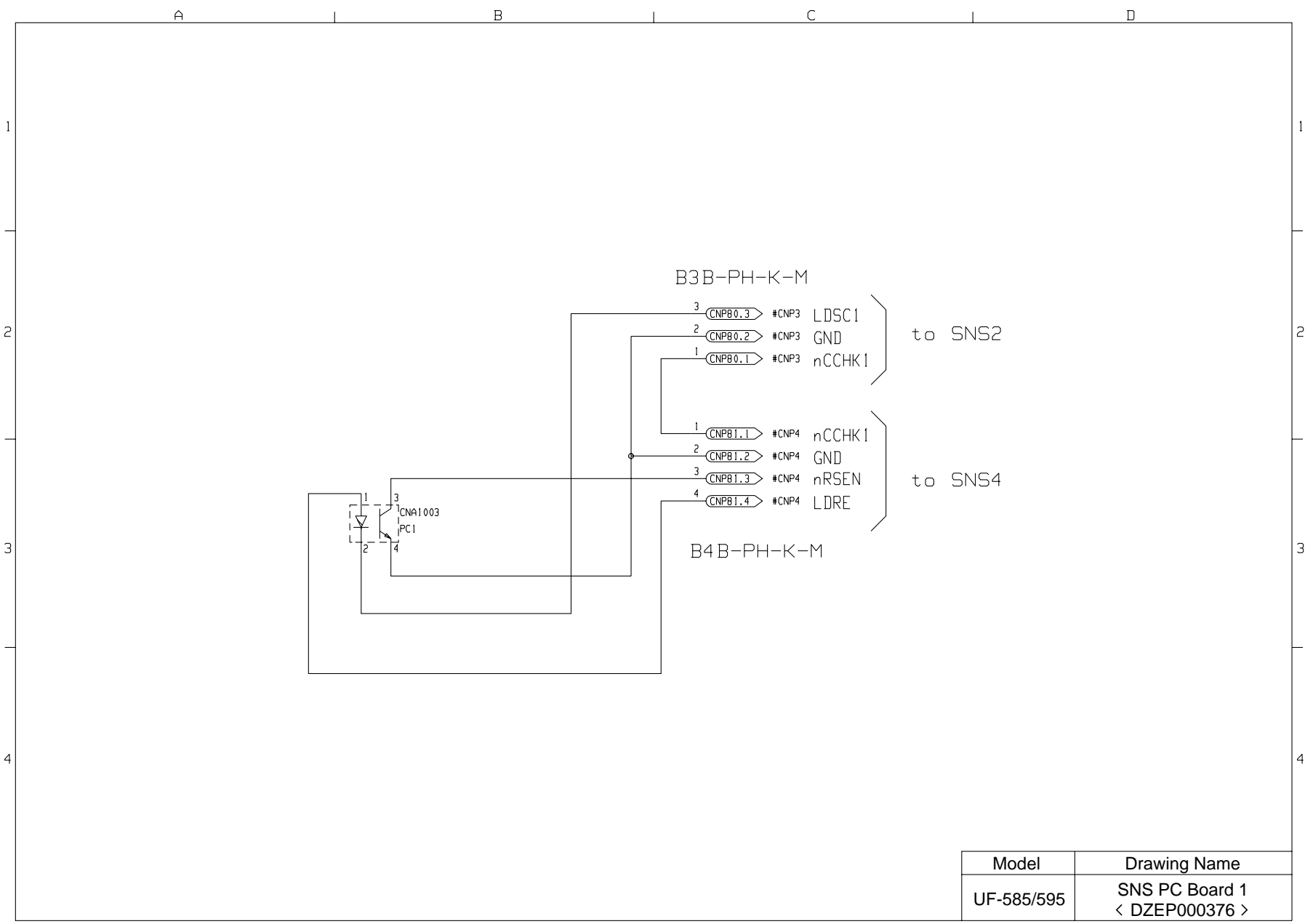


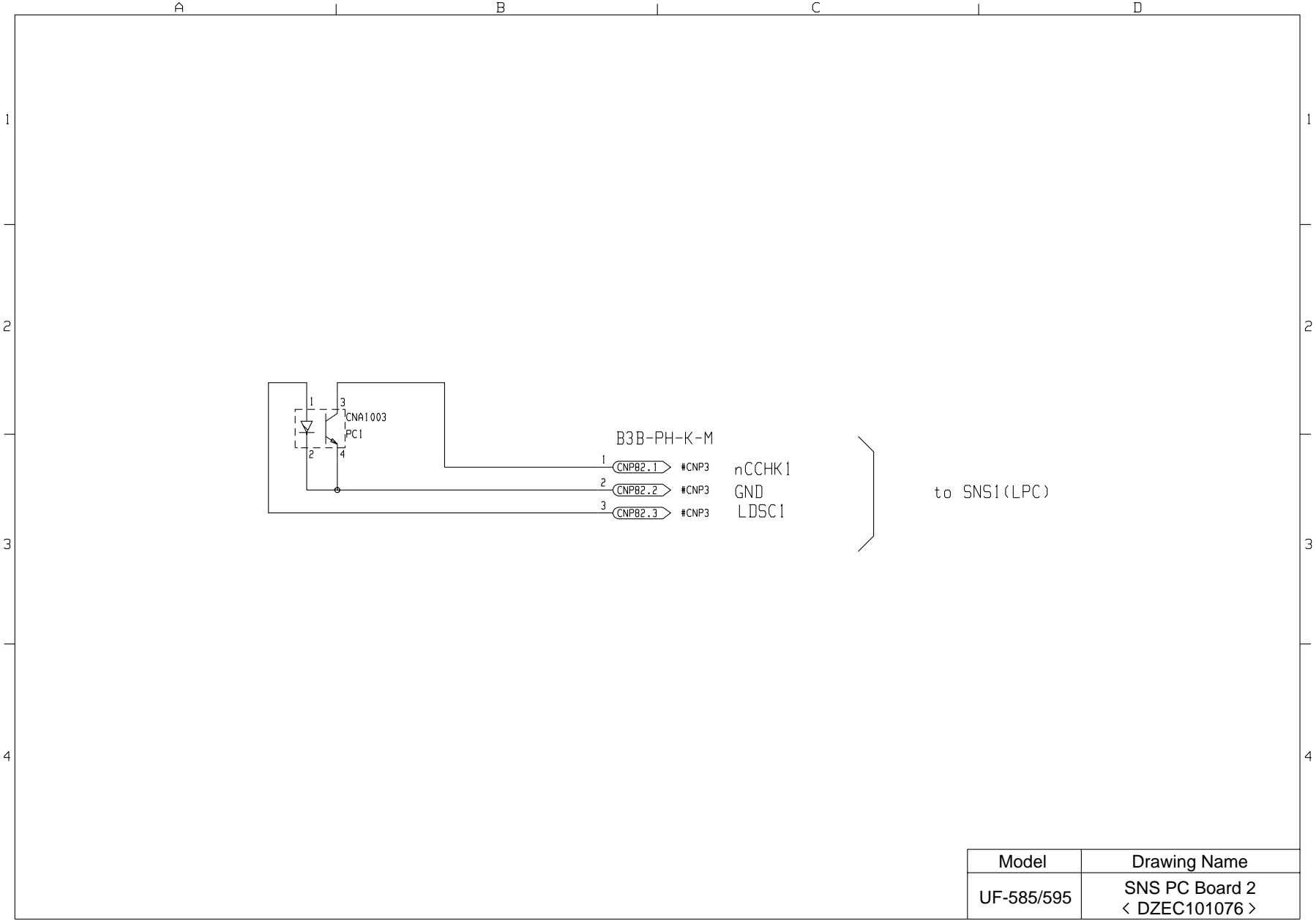


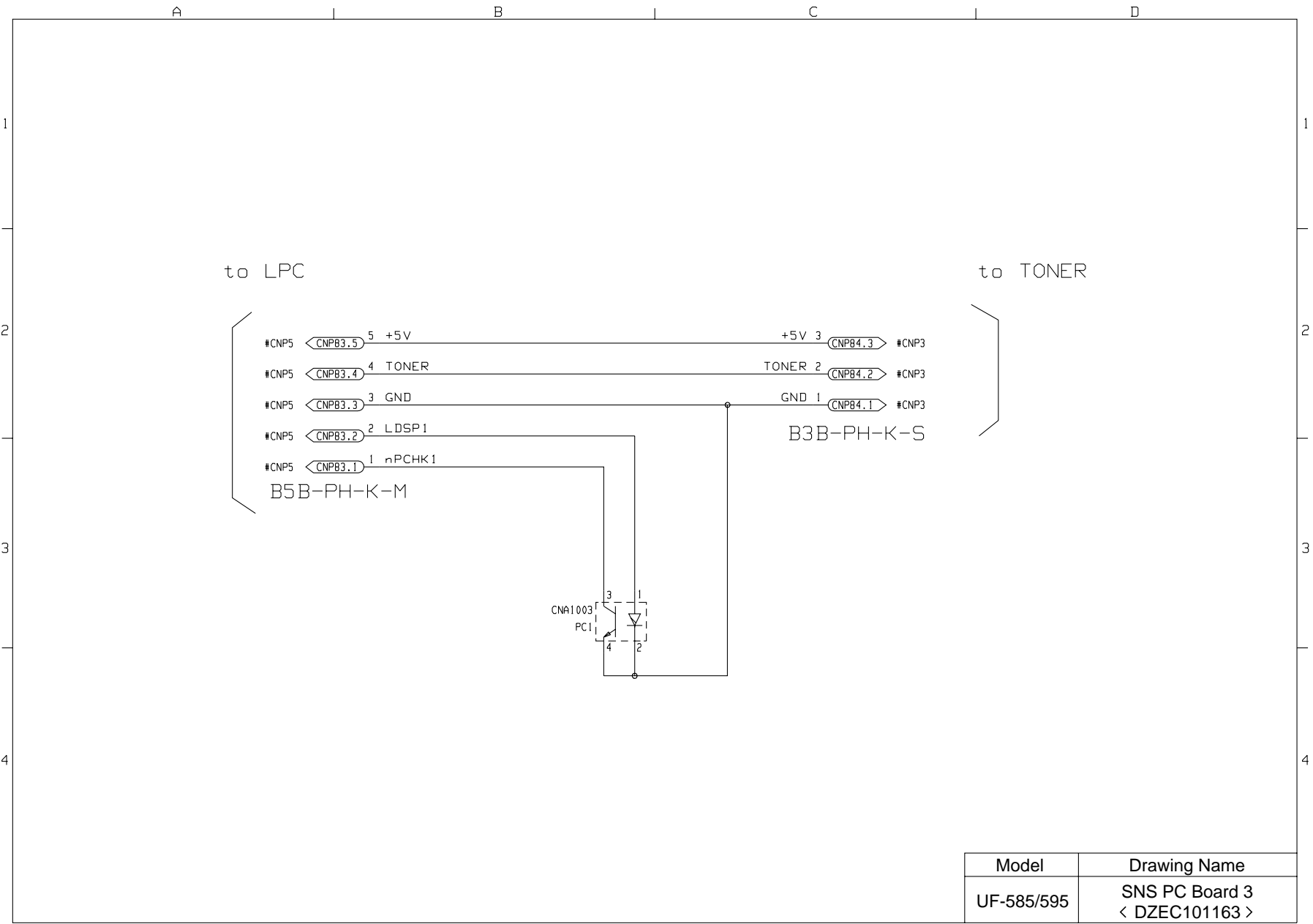


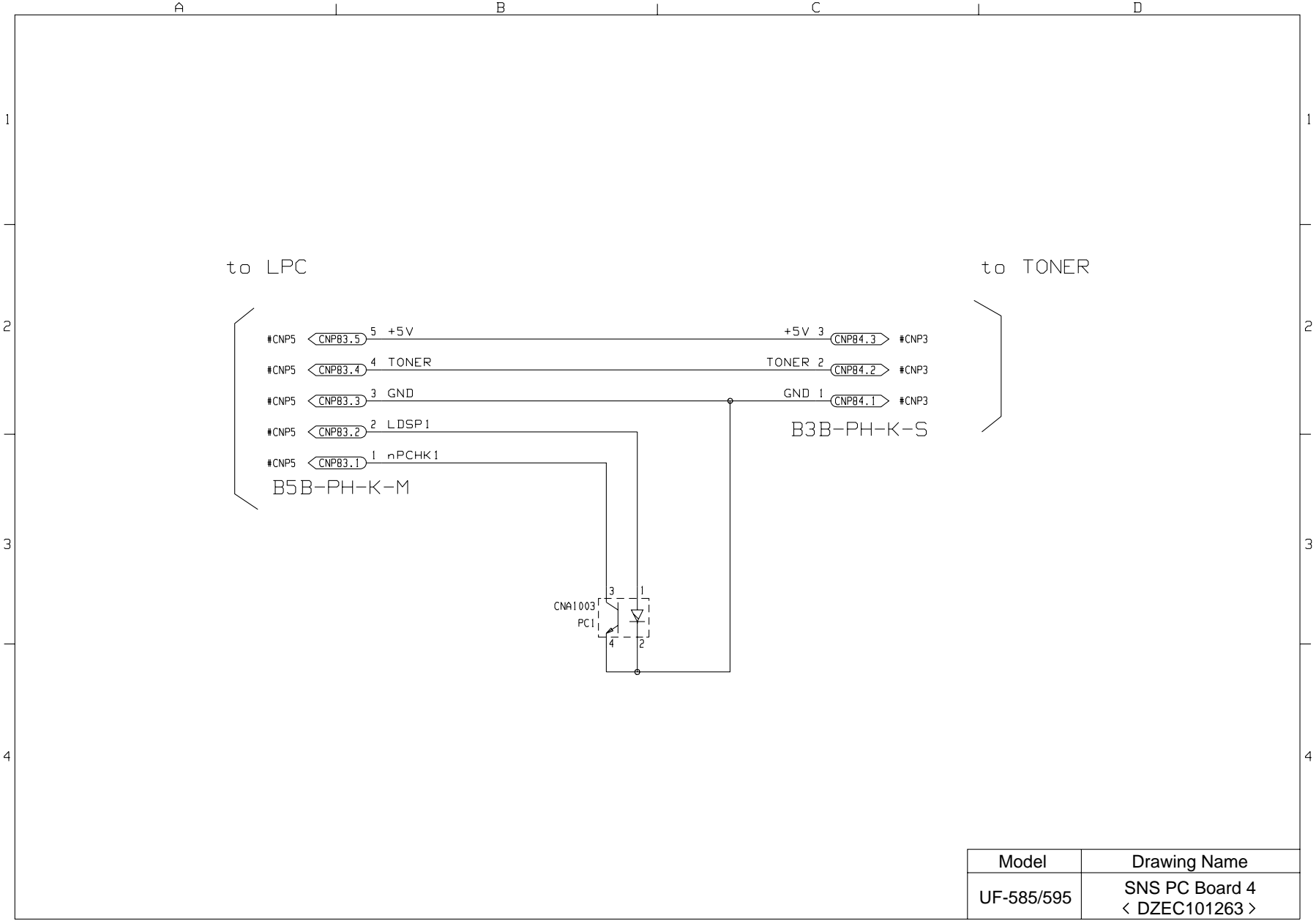
Model	Drawing Name
UF-585/595	LPC PC Board (2/3) < DZEC101039 >

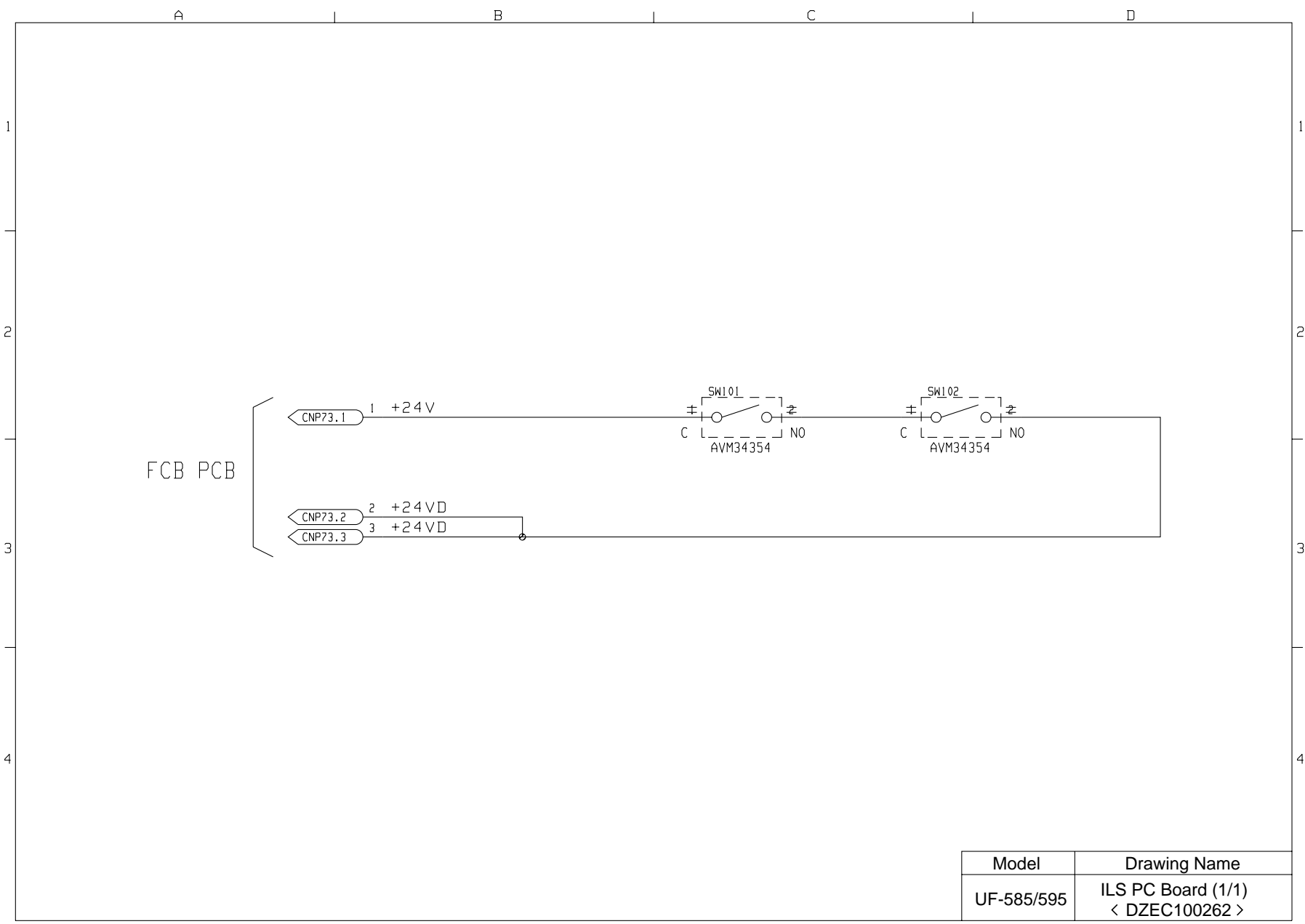




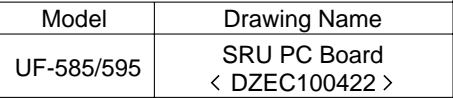


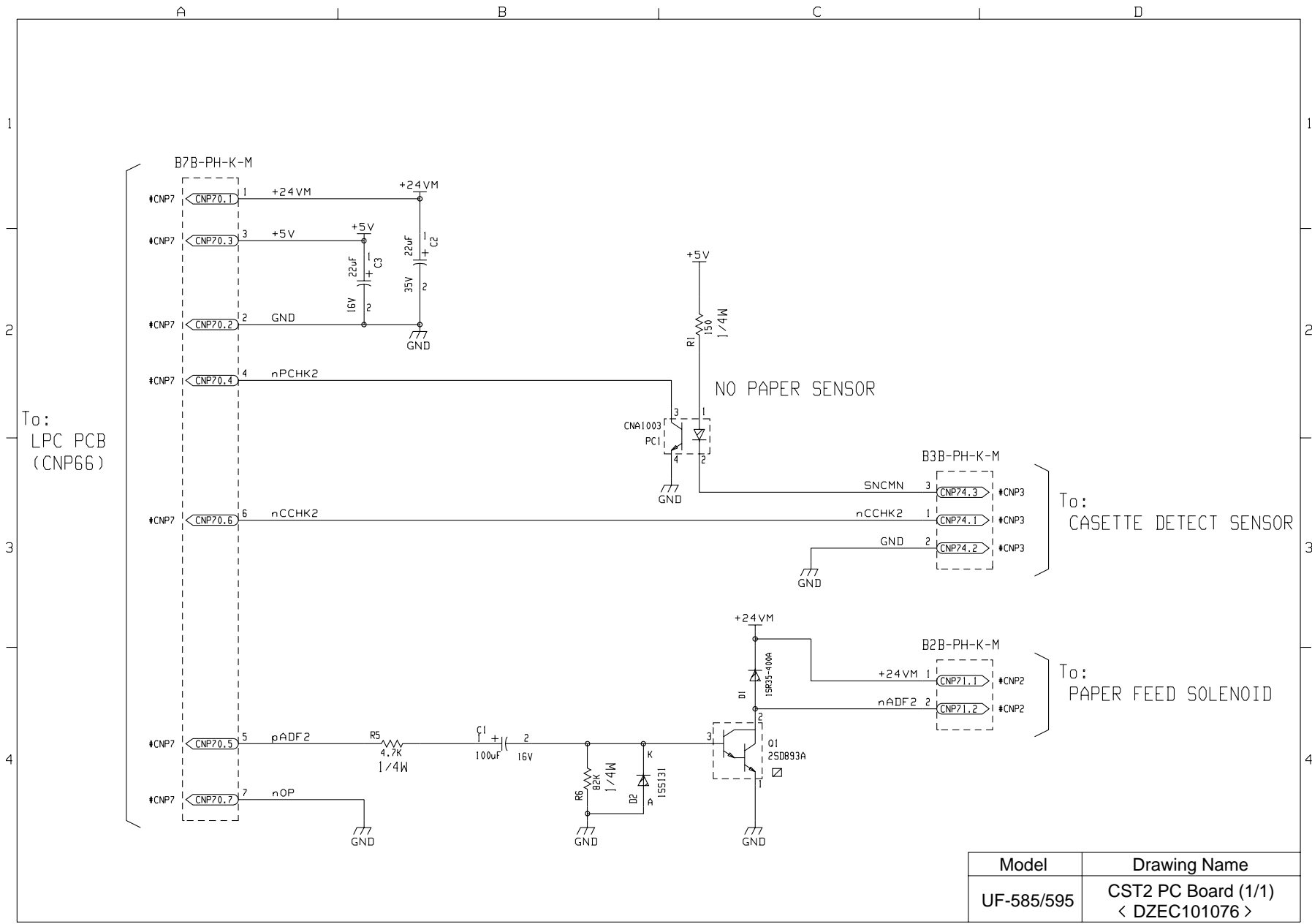


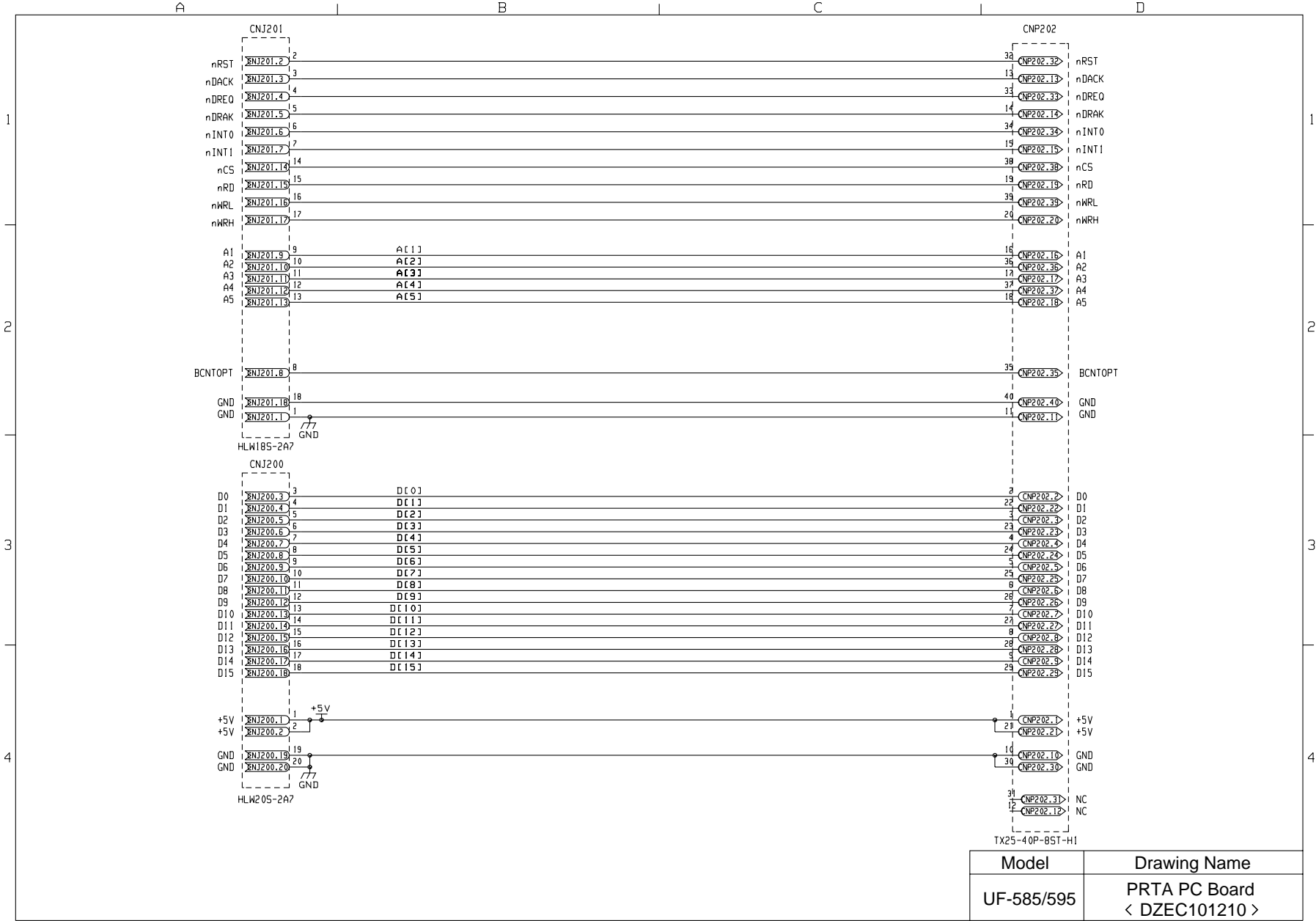




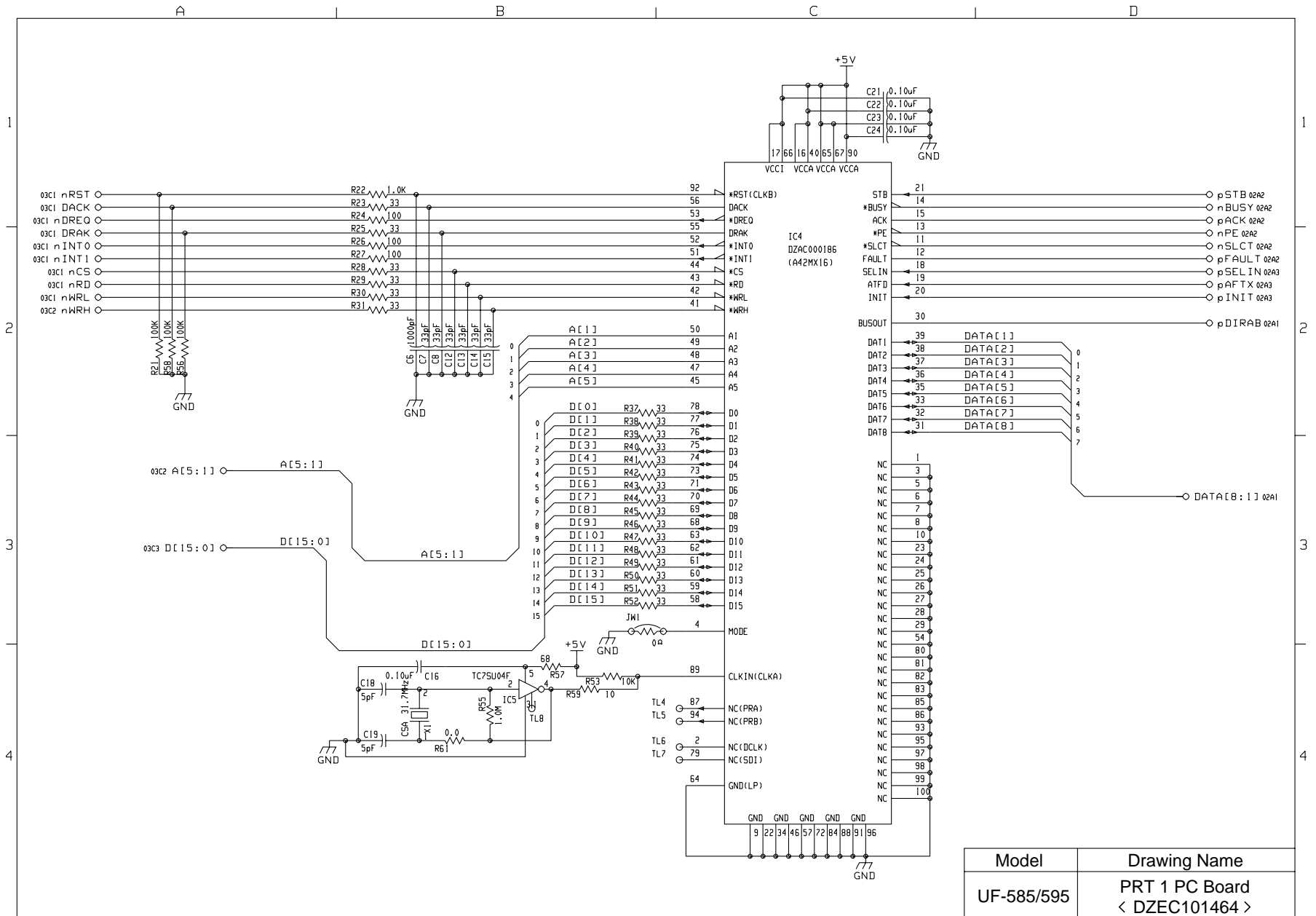
Model	Drawing Name
UF-585/595	ILS PC Board (1/1) < DZEC100262 >







10.13 PRT PC Board



Model	Drawing Name
UF-585/595	PRT 2 PC Board < DZEC101464 >

